



## Original Correspondence.

## GOVERNMENT INSPECTION.

Sir,—I made a suggestion in the Journal of June 21, for the improvement of the present system of Colliery Inspection, which I thought might have been noticed by some of our colliery managers, and have had an opinion expressed about it; but, I suppose, they think it would be better left alone, as it would only impose more duties upon them, while they fancy that they have enough to do for the Inspectors of Mines already. I admit the colliery rules are very stringent and binding on colliery managers, and more so in this district than others; but what I have suggested would be very little added to the bulk; and as there are more views to be taken of it than one, I will try and place it in another light. In case of an accident in a colliery, the manager's duty is to write the Inspector of the district, and acquaint him of the nature of such accident; and I hold it would be much easier for him to do so, if he could refer the Inspector to a map in his possession, and point out the locality, as well as the nature, of the accident. We will suppose an accident to occur in a colliery the Inspector has not visited for two years or so; he is duly advised by the manager of the nature of such accident, and he passes it over as a pure accident; but, as is frequently the case, the coroner and jury at the inquest please to decide that the inquest shall be adjourned until the Inspector comes to visit the colliery, and give his opinion as to the nature of the accident, and thus most of his time is spent, while he might be more usefully employed; and I believe that if he had the tracing which I suggest, two-thirds of the accidents that he is called upon to attend could be explained by letter, and thus free himself and the manager from such delay and time uselessly spent. Another view of the matter is this—In case of an accident, when the Inspector has been supplied with a tracing of the working to which he has given his sanction, it would relieve the manager of much of the responsibility; while, as it is, the Inspector can put what light he pleases on the matter, as he has not before expressed an opinion about it. I believe accidents would occur if our Inspectors had altogether the management of the plans and operations; and I think that managers of collieries would do well to supply the Inspector with this tracing, and thus remove some of the responsibility from their shoulders to the Inspectors. Had I the management of a colliery under the present Rules and Regulations, I would certainly supply the Inspector with a tracing, and I believe it would be more satisfactory to both parties; as it would give him an idea of what I was doing, and if he approved of it, I would carry it out to the best of my ability; and, in case of an accident, I should be on a better footing with him, as what I had done was with his sanction. I wish some of your readers would express an opinion on this matter.

Aberdare, July 15. — AN ABERDARE COLLIER.

## A NEW ROUTE TO INDIA SUGGESTED.

## THE SYRO-ARABIAN RAILWAY.

Sir,—Our rapidly-increasing eastern commerce, and the late important changes in the governing polity of India, demand additional facilities of communication; and the attention of British and Indian statesmen and merchants is just at this time specially drawn to the pressing necessity of adopting a third route between England and India. The stable prosperity of our eastern commerce involves at least two preliminary requirements—1. To keep as far as practicable the ocean track, which our navy is potent to protect without assumption of any boastful supremacy over the common highway of the nations.—2. To traverse alien territory by the shortest interval. Thus the shortest practicable line north of the Arabian frontier, connecting the Mediterranean with the Persian Gulf, becomes the chief question for solution. Certainly the proposed Euphratean route, commencing from a terminus on the Levantine coast, somewhat about 200 miles north of the shortest geographical line of junction between the seas, and following generally the course of the most tortuous and (for its length) the shallowest river of our globe, fails to fulfil these essential conditions; although, indeed, such a track might prove peculiarly advantageous for the Porto, and for Russia as a path to the shores of the Gulf and the Indian Ocean.

Now, contemplating mainly, though not in the spirit of an isolated exclusiveness, the interests of British commerce, a line from Acre by Zazole and Hilla to Mohawra would appear the most desirable, as furnishing a suitable position on the Mediterranean, linked by a series of plains, which in that latitude penetrate the mountain barriers of the Syrian coast, with the depressed valley of the Jordan; while at the Gulf side a deep and sheltered harbour is found at the embouchure of the Karoon, the great fluvial outlet for merchandise from the Persian interior. The physical obstacles of such an extensive line through partially explored tracts are much exaggerated, and it is not improbable that the disinclination of the nomadic tribes to regular habits of labour may be found the heaviest discouragement at the outset; but English money, remunerative wages, and the all-attractive inducement of trade, must in due time produce their legitimate effects with the Arab Sheiks, and their wayward followers. As for the positive hostility of these semi-barbarous tribes to the accomplishment of peaceful and civilising projects beneficial to all parties, the history of British enterprise in every quarter of the world convincingly demonstrates that unswerving purpose, moral suasion, and superior mind are destined ultimately to conquer an enduring success. These are the true foundations of power; the sword is but a clumsy instrument after all, and the time rapidly approaches when its use shall altogether cease. It is stated likewise, by competent maritime authorities, that the Persian Gulf affords a comparatively secure bed for the electric wire, and the construction of a trans-Syrian telegraph to Mohawra might be completed in a few months, and would constitute a fair tentative basis for calculation of the probable cost and time of executing the greater project.

The writer brought this subject before the British Association in 1856, and again the following year, under a new aspect, before the Liverpool mercantile community, in a paper read at a meeting in St. George's Hall, entitled "Commerce of the Medial East," illustrated by several maps. In these and subsequent communications the various relative topics are discussed in the light of all available information; and, in closing these few observations, respectfully pressed on the attention of those more materially interested and better qualified to form a critical opinion, I would only remark, that if a new and shorter route to India is desirable, and likewise fairly practicable, the sooner it is inaugurated the better: each year's postponement is, in fact, equivalent to cumulative losses in life and treasure; while, on the other hand, the progress of traffic, resultant from increased security of goods and saving of time in transit, would in a comparatively brief period repay the whole cost of the undertaking. JOHN LOCKE.

Dublin, July 16.

## RAILWAY RULERS—LAWYERS v. DIRECTORS AND SHAREHOLDERS.

Sir.—The intolerable evil, now sadly on the increase, in railway management—the lawyer's advice and controul, ending as it is sure to do in the construction of law costs instead of railways, sternly demands the interference of the Press, especially as the shareholders are powerless against those who speculate in railways with a view to jobbing. I am one of the former unfortunate, a "done-up" shareholder in the Andover and Redbridge Railway, the remaining capital in which line is likely to be swallowed up by the directors being quietly enough led into all manner of Chancery causes, lawsuits, arbitrations, parliamentary applications, &c.; in which agreeable occupation there are on one side innumerable opposing lawyers, on the other the substance of us poor shareholders, reminding one forcibly of the memorable decision of the monkey arbitrator, before whom the litigant cats submitted their quarrel as to the ownership of the oyster, and whose pithy judgment should be before all litigants—"A pearl shell for thee and thee—the oyster is the lawyer's." I fear much that at the conclusion of our lawsuits with contractors, engineers, &c., a similar result may be looked for.

Not to trespass too much upon your space, however, I merely seek to direct attention to this now notorious case of lawyer's advice and control. In the report of the directors (or lawyers) read at the last half-yearly meeting, in March, the shareholders were informed that the company had become involved in litigation both with their late contractor and engineer, and that the directors were advised, and had every reason to believe, that the result of the proceedings would be satisfactory to them and the *long-fide* shareholders. I looked on this statement at the time as a sheer delusion, or throwing legal dust in the shareholders' eyes. I have now before me the *Hampshire Advertiser* of the 13th inst., which gives the following paragraph as to the "satisfactory" result so far:—

"ANDOVER AND REDBRIDGE RAILWAY.—This line, which has had to contend with so many obstacles, has experienced another, in the issue of a suit at law, in consequence of which the works, which were proceeding vigorously, have come to a sudden standstill. The action at law was commenced by Mr. Hattersley, the former contractor for the works, and has reference to a large number of shares of which he was the registered proprietor. It is hoped that the law's delay will not occasion any prolonged stoppage of the work."

Now, Sir, surely the *long-fide* shareholders should look to this in time; and before the next half-yearly meeting, in September, ascertain what the lawyers are about, and endeavor to snatch the remainder of the oyster from the monkey's clutches.

A SHAREHOLDER.

## AUSTRALIAN DIAMONDS.

Sir,—How rarely do original discoverers receive from a discerning public other than doubt or ridicule. Many years ago I published in wealthy London conclusive evidence of the existence of diamonds in Australia: one transcript was as follows, addressed to Mr. J. W. Peppers, Melbourne:—

*Launceston, V.D.L., Nov., 1851.*—Respecting my opinion upon the stones you sent me, I have several times analysed such, and can come to no other conclusion but that they are of the same family as the pure diamond; that is, if diamonds are carbon these are also carbon. The last I tested was in the presence of Dr. Jenneret. I made a hole in a piece of soft iron, then made the bar red hot, and quenched it, to be satisfied it was not steel; not being so, I placed in the hole one of that gentleman's crystals in powder, luted it close, and quenched it again in the same water, when it was made so hard that no file could abrade it; consequently, I can only infer that the dispersion of the stone had converted a portion of the rod into steel. The only difference I can discern between the Cape barium diamonds and the real gem is their degrees of hardness and brilliancy; like a green ivy nut, requiring time or heat to harden them. The Australian diamonds appear to retain too much of their waters of crystallisation; deprive them of that, I have no doubt they would become valuable in the arts. I find there are two sorts, very much the same in outward appearance; one is pure quartz, the other of the same specific gravity as the most valuable of all stones.—G. F. GOBLE.

The gentleman alluded to was then commandant of Flinder's Island, in Bass Straits, where I feel confident hard as well as soft diamonds abound. Yet I do not wish to infer that all the clear pebbles found there are of similar intrinsic value, only that, independent of crystals of silica, alumina, calcane, &c., there exist stones whose components exactly conform to the precious diamond, a substance classed as pure carbon—a definition which I have convinced myself is erroneous, by finding in every analysis the atomic essentials of the purest mineral is not of similar elementary principles as the purest lignite or charcoal, but as widely different in their origin, natures, localities, and applications as their specific gravities, colours, hardness, and other observable qualities can be.

G. F. GOBLE.

## A RAMBLE THROUGH THE EXHIBITION.

Sir,—Business having called me from town for the last two months, I have as yet had but one opportunity of visiting the Exhibition. I then spent about eight hours in rambling through its various winding courses, without confining myself to any particular department or section. In my undefined course, it so happened that I found myself in the space allotted to metals and minerals, which certainly attracted my attention. In it I observed some iron ore and coal, interspersed here and there with stones of copper, lead, and zinc ore, all of which to the practical man are as familiar as the ground he treads, and to the mining tourist an every-day observation. A large stone of ore from this or that mine is no indication of its prolificacy. I know mines from which but one stone of ore was ever raised, and that a large one; I mean there was never sufficient ore for a sale. Therefore, those who are novices in mining on observing an isolated stone of ore should pass it as unworthy of notice, otherwise than to enquire what such might be. I expected to have found the arrangements in this department carried out with scrupulous care, under the supervision of the principals in Jermyn-street School, and a competent man placed there to render to the anxious seeker after knowledge such information as he required. There ought not to be a single representation of the old school found in this department; it should have been composed wholly of new ores hitherto unknown to the British miner; or if old ones, in a new character or compound, such as copper, lead, zinc, silver, iron, &c., so combined as to be new in character, and such as could be found in quantities that would pay for working. Then there is sulphur, arsenic, mundine, cinabar, &c.; in fact, all brittle and other ores, numbering largely as they do, and of which not a practical man in a hundred can detect fifteen, should be here represented in their fullest character. I say without it, and a competent person constantly on the spot to define their several characters, the Exhibition is not a complete guide to the British miner.

I have on many previous occasions referred to England's mineral wealth as being her stronghold. If that once decays, what will be her position? We have public men paid for such purposes: why do they not attend to their duties, and prepare such collections?—collections, I say, that would truly represent England's mineral wealth, and be worthy of its name. It is not two months since a mine agent was introduced to me by his friend as one of the best miners in England. After some conversation I showed him a stone of ore yielding about 17 per cent. copper; on examination he told me it was worthless, and did not contain sufficient copper to pay return charges, and of which ten others had expressed similar opinions. I afterwards introduced a piece of Spanish sulphur ore that I had picked up on Glasgow Wharf, containing about 50 per cent. of sulphur; this the same gentleman said, was worth 40 per cent. for copper. These are points which England's paid men should thoroughly master, and communicate their knowledge to working practicals, who cannot be expected to be expert chemists, and for the want of a little instruction often stumble over the best of ores. When in Ireland, a few weeks since, I saw a miner throwing aside as useless stuff which he termed "ponderous spar," some of which I brought with me, and on being assayed was found to contain 50 per cent. of lead. To another high-standing chemist I gave portions of a stone which had contained 50 per cent. of lead, when it was found to be only zinc; and I may hold litters and return the assays from four of England's supposed best chemists, the samples of which were all pulverised, reduced to a fine powder, and thoroughly mixed before being sent to them. Strange to say, not one of these returns showed a single percentage of the ore contained, and after being advised of what it really was, the first returned 52 per cent.; the second, 42 per cent.; the third, 30 per cent.; and the fourth, about 40 per cent., with an apology. Now, Prof. Pepper undertakes to detect the one-hundred-millionth part of a grain of ore in the mass, which I consider close work, and would be glad to know if he will undertake the analysis of a sample of this pulverised emery sand if I send it him.

It is distressing to the British miners, who are so expert in detecting the ores to which they have been accustomed at home, to find themselves so much in the shade when abroad. Is not England's wealth sufficient to establish a collection of foreign minerals which to our miners are unknown? These would prove invaluable to such as hereafter be driven to emigrate. I say—Yes. Such a collection should be in the Exhibition now open, making it worthy the miner's attention, and not a sacrifice of his time and money also. I consider our paid men were in duty bound to have such an exhibition prepared, and some of them in attendance to render the information required. Surely, they could have dispensed with the shell collection—for awhile, at least, and called to their assistance such men as Mr. Etheridge, whose services would have been invaluable in making the collection, not only attractive, but interesting and intelligible.

I shall next direct attention to what was forcibly commented on in the public papers as a well-finished Model of the Holmbush Mine, got up by the Government paid officials.

As this mine has been known to me almost from childhood, I naturally felt anxious for a sight of what I expected to be perfection itself, and worthy the inspection of all.

In passing the north-west corner, near to where the samples of iron ore are exhibited, I saw a square box-like thing, the upper portion of which, I thought, represented the cage of window blinds. It was not such as would attract one's attention particularly, but on the mahogany wood-work below I saw the words "Model of Holmbush Mine." I stood aghast. In vain I endeavoured to discover something like a model. I even went on my knees, and looked through the brass lap, but could see nothing. I turned sides; it was the same. I then tried to open it, but found it fast. I then supposed it a puzzle box, but on examining the top the secret was discovered. There I found a space about 24 ft. long by 8 or 10 in. wide, in form much like a fiddle; I therefore, presumed what formerly occupied this space had fallen into the volcanic regions below, but as there was no smoke emitted, I supposed the crater to have become extinct. Nevertheless, with all my sanguineous, I fought it shy, lest it might be some infernal machine, to explode on the touch. After some little persuasion, I was induced to take a peep at what I was told were the infernal regions, which I discovered to be full of wires about 1 in. apart, and a few red strings worked about them, but nothing to represent a mine. In questioning the person beside me as to what it was, I got a very satisfactory reply to my interrogatory—"Did I not know what I saw?" Of course, I condescended to admit I did not, and that it was doubtful if he did either, when he politely called me "fool," pronouncing it a galvanic battery. I, therefore, wish practical miners visiting the Exhibition to inspect what is there set forth as a representation of a mine, and judge for themselves, if it does not more truthfully delineate a galvanic battery than that for which it is intended; and I am persuaded they will say any boy, being five years in a mine, to offer such to public inspection would deserve to be whorl-whipped—not only deserve, but would get it, too, were it the days of the past, when the birch was considered an essential requisite to education. These few remarks will, I have no doubt, tend to increase the daily receipts, leaving a greater surplus to the promoters of this great international undertaking, as many who had no intention of visiting will now find their way to where such a rare production can be seen. I regret, Mr. Editor, having trespassed so much on your valuable space, particularly at a time when there is so much of importance to record; but I cannot pass over one other point of interest I witnessed that day—"The Toad in the Coal." I have yet to learn if the "frog" who made the rounds of the papers the other day has found his way into this great repository of extraordinary things. But I did see that some one had, anxious to direct attention to his coal, hit upon the expedient of cutting a hole in the block, and inserting a glass case with an iron grating over it, through which could be dimly seen the mere form of a toad, which by its rustless unearthen evidently evinced the poignancy of its imprisonment. It bears no comparison to the toad of old, who quietly settled himself down as composed for the rock of ages to envelope itself around him, there to remain entombed for millions of years, whilst this poor creature is ever trying to effect its escape. I ask what has become of the zealous Humane Society? Why is such cruelty tolerated? Surely that body should be apprised of it; and I would urge visitors in passing the spaces allotted for iron in its various forms and stages of manufacture to turn into the court-yard on the left hand side, where they will find this ill-used creature, pinned between two blocks of coal, which, of themselves, are nothing particular to notice. But the confined toad, and the remarks thereon, I need not say, a discerning public will estimate at their worth. On my next visit other objects of interest or commiseration may present themselves, of which I shall take due advantage.—London.

NICHOLAS ENNOR.

## SLATE QUARRIES IN THE ISLE OF MAN.

Sir,—I intend the observations which shall be made on this subject to be of caution as well as guidance to those who are or may be connected or interested in these undertakings. I can say with safety that large fortunes will be made in this Island from slate quarries, but money will be lost too; it can hardly be otherwise while there are so many parties connected with a business that they know no more of than I do about the revolutions of the planets. There are abundance of slate rocks here—some very good. The surface appearance of superior and inferior are just alike to the common observer, and, in consequence, it is easy to mistake the spot to start operations; therefore, my advice is that no party or parties should advance money to open quarries without first getting an experienced man in the business, and trustworthy in every respect, to survey the ground and give his report. Should this simple advice be followed in every case, slate quarrying scarcely would be called a "speculation," but a permanent investment for good and steady interest for ages successively; because when a mountain of slate rock is discovered it cannot be worked out in one or two generations. Perhaps some persons (especially those who are interested) would like to hear what may be my opinion with regard to the profits which might be obtained from quarries here, but this is rather difficult to ascertain, as there are only limited trials being made as yet. That at South Barrule had been tried to the greatest extent, and I am told by men who have had every chance of knowing, that quarry paid all expenses for the last five years, with the exception of some extra cuttings and tunnels which have been made for the benefit of future times. Taking this fact to be true, as I have no reason to doubt, we may make pretty fair estimates. There are at least two quarries indicating quite as good rocks,

according to their limits, as that of South Barrule, and if that would pay expenses in a fair way of working so far back, large profits may be estimated at present, with such a great advance in the price of slate; but, however, after a careful calculation, I must say that it is difficult to come to a conclusion for any definite account; in some instances I can calculate on 40 per cent., in others only 20; therefore, I cannot do more than estimate the interest to be from 20 to 40 per cent. per annum on the capital which may be required.

I may touch upon these points after further investigation.

The next quarry on the list for which a lease has been granted is that of Messrs. Goldsmith and Co., at Ramsey. In 1861 he was in want of slate to supply his customers, and could not be furnished in less than six months in any part of Wales; this, of course, was a long time to wait for a cargo of slate, especially when a cargo could be sold almost every week.

He had often heard that there must be a good quarry in the Glen, as the old people of the North were taking plates out of it across of years back.

Mr. Goldsmith made up his mind to give it a trial. He accordingly got some Masons to start the work, who, of course, brought their tools with them—that splitting, or rather opening, the shale and twigs flags which are always on the top of slate quarries, but their owners never thought of digging for the solid rock. In consequence, the few slates that they got out were thick and heavy, and the colour brown and reddish, the natural effects of surface water and clay running between the crevices.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course, gave him spirit, but still he never got the solid rock ready to start with. He has been viewing the tunnel; it is about 60 yards long, and through some excellent slate rock of beautiful colour.

Something, thought Mr. Goldsmith, must be wrong, either with the quarry or the men. He sent for a Welsh quarryman, who directed him to clear twice the depth of the old hill, and sink a shaft from the cleared place to meet the tunnel, the result would be that the opening of a good quarry. This, of course

## THE MINING JOURNAL.

in this case, that our Irish states will not only compete with Welsh states in the market, but will enable the proprietors of the White Horse Quarry to undersell their Welsh neighbours either at home or abroad. We are aware that a prejudice has existed against Irish states, simply, we think, because they are Irish; but when it is shown beyond a doubt (it has been already proved) that the states at White Horse Quarry are equal to the best description of Welsh states, we suppose the public will accept the knowledge that "something good may yet come out of Nazareth."—*Westbury Eagle.*

## MINING IN AUSTRALASIA—MONTHLY SUMMARY.

MELBOURNE, MAY 26.—Since my last communication the whole of the colony has been visited with heavy and almost daily falls of rain, which have assisted the miners on almost all our gold fields to wash up the dirt accumulated during the summer months, but the yield has in many cases fallen far short of what was anticipated. The quantity of gold brought down by escort since Jan. 1 to this day is 618,230 ozs., against 727,275 ozs. for the corresponding period of last year. These returns show a lamentable falling off, which must result at the close of this year in a decrease of 275,000 ozs. of gold, equal in value to 1,000,000.

It is a singular fact that the productiveness of our gold fields has been steadily declining since 1852 exceeding one million sterling per annum on each

year; the value of gold produced that year exceeding 17,000,000, and the total value of this year cannot much exceed 6,500,000.

The total shipments for the month of May were 15,000 ozs., the value per ounce being 518,818 ozs., of the value of 3,277,272, of which 158,625 ozs. is the product of New Zealand, leaving the quantity of Victorian gold 660,193 ozs., of the value of 3,277,272, and, for comparison, I give the corresponding shipments for the same period last year at 711,549 ozs., worth 2,846,598.

The New Zealand gold fields still afford considerable attraction to our mining population, and although the balance of immigration over emigration, as regards that colony, is present in our favour, it is not in consequence of their gold fields having become less attractive, but from the difference of climate, a lengthened residence in this colony rendering the constitution unfit to stand against the snow, frost, and rain of New Zealand.

It is a singular fact that the miners of the old country are the ones who will be the most contented in New Zealand.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

It is about this time that we are excepting it of course, that they are

they will be a more contented opportunity.

JULY 19, 1862.

The contract is based on the yearly supply of 12,000 marcos of silver, deliverable monthly, or every six weeks, or the rate of 1,000 marcos per month; and at the price of 83½ per marc, as before. A free exportation of all silver beyond the above-named quantity is granted, as well as a free importation of everything needed for the mines.

**LUSITANIAN.**—July 5: **Falhai Mine**—**Basto's Lode**: The lode in Taylor's shaft is worth 4 tons per fathom. The lode in River shaft, below the 50 fm. level, is worth 1½ ton per fm. The lode in the 60, east of Taylor's, is composed of quartz. In the 60, west of Taylor's, the lode is worth 2½ tons per fm. In the 50, west of Taylor's, the lode is worth ½ ton per fm. In the 50 west the lode is poor. In the 38, west of Taylor's shaft, the lode is worth 1 ton per fm. In the 23, west of the Silde lode, the lode is 1 ft. wide, producing stones of ore. The lode in the 18, west of the Silde lode, west of Abel's winze, is poor. In the 8, west of Perez shaft, the lode is 1 foot wide, composed of soft and hard quartz. In the adit level, west of Perez shaft, the lode is unproductive. In the stopes No. 1, above the 50, west of Ernesto's winze, the lode is worth 1 ton per fm. In the stopes No. 2, above the 58, west of Clondion's winze, the lode is worth 1 ton per fm. In the stopes No. 3, above the adit level, west of stopes No. 2, the lode is worth 1 ton per fm. In the stopes No. 4, above the 38, west of stopes No. 2, the lode is worth 1½ ton per fm. In the stopes No. 5, above the 50, west of Valente's winze, the lode is worth ½ ton per fm. In the stopes No. 6, above the 50, east of Jackson's winze, the lode is worth ½ ton per fm. In the stopes No. 7, above the 60, west of Ball's winze, the lode is worth 2 tons per fm. In the stopes No. 8, above the 60, east of Ball's winze, the lode is worth 2½ tons per fm. In the stopes No. 9, above the adit, west of Perez shaft, the lode is worth 1 ton per fm. In the stopes No. 10, above the 50, east of River shaft, the lode is worth ½ ton per fathom. In the stopes No. 12, above the 60, east of Joaquim's winze, the lode is worth 3 tons per fm. **Mill Lode**: In the 38, east of Taylor's shaft, the lode is unproductive. In the stopes No. 11, above the 38, west of the canter shaft, the lode is worth 1½ ton per fm. The lode in the rise above the 50, west of River shaft, is producing stones of ore. In the stopes No. 15, below the 38, east of Rodriguez's winze, the lode is worth 1½ ton per fm. **Caister Lode**: The lode in stopes No. 16, west of Luis' winze, below the 38, is worth ½ ton per fm. **Great Caunter Lode**: In the 40, west of Oak shaft, the lode is 3 ft. wide, spotted with lead throughout, worth 12 cwt. of lead per fm. In the 30, west of same shaft, lode small and poor. **Minimes' winze** is holed to the 30. In the stopes No. 14, above the 30, west of Oak shaft, the lode is worth ½ ton per fm. **Silde Lode**: The lode in the 28, west of the Mill lode, is 2 feet wide, composed of flocks and a small branch of ore on the north side of it, but nothing to value. In the stopes No. 13, above the 10, east of the old shaft, the lode is worth 1 ton per fm. **Carvalhal Mine**: The lode in the stopes below the 10, east of the inclined shaft, is worth 2 tons of lead per fm.

**THE NEW GRAND DUCHY OF BADEN.**—**S. Richards**, July 14: In the 54 north the two parts of the lode, referred to in my last report, are again forming together, and improving a little for ore. We have now 3 feet of lode in the end, worth 3½ per fm. The stopes in the back of this level are producing on the average 6½ per fm. In the same level south there is no alteration in the lode to mention. In the 44 north we have still 4 feet of the lode, worth 4½ per fm. In the same level south the lode is 1½ foot wide, worth 3½ per fm. The stopes in back of this level are worth 8½ per fm. The stopes in the back of this level, north of the shaft, are worth on the average 6½ per fathom. In the 34 north we have 3 feet of the lode, 5½ feet high, worth at the rate of 4½ per fm. In the same level south the lode is 1½ foot wide, spotted in places with ore, but at present not enough to value.

**FORTUNA.**—June 5: **Canada Incosa**—**West of Taylor's Engine-shaft**: The 90, west of O'Shea's shaft, is worth 1 ton per fathom. In the 80, west of Saez's winze, the men have made good progress in getting through the cross-course. The 70, west of Duarte's winze, is worth 2 tons per fathom. The ground is getting much harder for driving. The 65, west of Judd's winze, is also worth 2 tons per fathom; lode of a promising and productive character, and the ground easy for driving. The lode in the 45, west of Judd's shaft, is very small and poor. **East of Taylor's Engine-shaft**: The 55, east of Larida's winze, is worth 1½ ton per fathom; the lode is small at present, and the ground rather hard for driving. The same level, west of Kennedy's shaft, is worth ½ ton per fathom; the lode appears to be divided into two or three parts. The ground in the 55, east of Ball's winze, is hard for driving. The 45, east of Carro's shaft, is worth 1 ton per fathom; this end is holed to Munro's winze. The 30, east of Bartolome's winze, is worth ½ ton per fathom, lode small at present. **Shafts and Winzes**: The water in Carro's shaft is very quick. El Clavel winze is worth 3 tons per fathom. Moron's winze is worth 3 tons per fathom; the lode is divided into two parts—Zamora's winze is worth 1 ton per fathom; Castano's winze is going down in old workings; the water being abundant causes great difficulty in sinking. Domingo's winze is also still in old workings. **Los Saldos Mine**: The 75, west of engine-shaft, is worth ½ ton per fathom; the lode is small at present. The 65, west of Gia's winze, is worth 1½ ton per fathom. The 55, west of Lopez winze, is worth 1½ ton per fathom. The ground in the 45, west of Oribe's winze, is very much disarranged at present. **East of Engine-shaft**: The 75, east of engine-shaft, is worth 1 ton per fathom; lode small and the ground hard for driving. The 65, east of Romero's winze, is worth ½ ton per fathom. The 55, east of Olalia's winze, is worth 1 ton per fathom; the lode is very regular and rather improved since our last. The 55, west of San Pablo's shaft, is worth 1½ ton per fathom. The lode shows indications of improvement. The 55, east of same shaft, is worth ½ ton per fathom; ground hard for driving, and the lode very small. The lode in the 45, east of San Miguel shaft, is very small, being influenced by a small cross-course at this point. **Shafts and Winzes**: **Buenos Amigos** shaft is worth 2 tons per fathom. We have got the lode in the shaft: it is of a very productive and promising appearance. Juan's winze is worth ½ ton per fathom. **General Remarks**: The tribute department remains much as usual. We estimate the raising for July at 320 tons.

**LINARES.**—July 5: **West of Engine-shaft**—**South Lode**: The 95, west of Seguro's winze, is worth 1 ton per fm.; the lode is rather disarranged. The men are making excellent progress in the 85, west of Marin's winze. The ground in the 61, east of Warne's shaft, is moderately easy for driving. In the 61 west there is an immense void; the lode is consequently unsettled, but is worth 1 ton per fm. The lode in the 61, west of Tobenera's winze, is small, and the ground hard for driving. The lode in the 41, west of Crosby's shaft, is very wide; we are driving on the north part, in the expectation of finding lead. **East of Engine-shaft**: The 95, east of La Suerte winze, is worth 1 ton per fm.; the lode is still very large, but the branch of lead is small at present. The 85, east of San Eduardo winze, is worth 1 ton per fm.—lode large, chiefly composed of carbonate of lime and lead ore. The lode in the 75, east of Casas' cross-cut, is worth 1½ ton per fathom. The 75, west of Casas' cross-cut, is worth 1½ ton per fathom. The 65, east of Basto's winze, is worth 1 ton per fm.—**North Lode**: The 75, east of Nicolas' winze, is worth 1½ ton per fm. The men are now opening on the south part of the lode in the 65, east of Seron's winze, which at this point is unproductive. The 65, west of Lupion's winze, is worth 1 ton per fm.—lode large, and very hard for driving. **Shafts and Winzes**: There is a great increase of water in Crosby's shaft. The lode in Thor's shaft is wide, and of a promising character, worth 2 tons per fm. Isidora's winze is worth 1½ ton per fm.; the lode has somewhat improved. Mendoza's winze is holed to the 75. Delgado's winze is worth 1 ton per fm. Llorido's winze is worth ½ ton per fathom—lode very small, and the ground hard for sinking. Duarte's winze is worth 1½ ton per fm.; this winze is opening up a good piece of tribute ground. Vidal's winze is worth 1 ton per fm.; the lode has fallen off very much in this winze. Roble's winze is worth 2 tons per fm. **General Remarks**: All the surface work is going on with its wonted regularity. The stopes throughout the mines are looking much as usual. We estimate the raisings for the month of July at 420 tons.

**TREATMENT OF AURIFEROUS ORES.**—An apparatus for separating gold dust from auriferous sands has recently been patented in this country by M. Emile Claude Barbotte de Beaulieu, of Avignon, France, through Messrs. Cowper and Abel, patent agents, of Southampton-buildings, Chancery-lane, which apparatus has been tried in France, and found entirely successful. The following is a general description of the apparatus:—A long narrow metal trough or tray, containing a thin layer of mercury, is suspended inside a cistern, filled, by preference, with hot water. The auriferous sand is introduced into the trough through a hopper, and a rapid vibratory motion is imparted thereto, as also to the trough, by means of suitable machinery, by which the surface of the mercury is broken up into small ripples, undulating with great rapidity. This motion is, consequently, imparted to the auriferous sand floating upon its surface, which sand, as it passes slowly along, becomes so thoroughly shaken and brought into contact with the mercury that the whole of the fine gold-dust is precipitated, into and amalgamated with the same. The sand thus deprived of its auriferous deposit, passes over a spot at one end of the trough into a box from whence it is removed at pleasure; the mercury is drawn off when required through a cock at the other end of the trough. It will be evident that the action of the sand may be continued at pleasure, as its exit from the trough is entirely dependent upon the quantity admitted from the hopper. As the water in the cistern has no other than the vibratory motion, there is no liability of the gold-dust being washed away, as in the apparatus where a flow of water is employed. The gold may be removed from the mercury by any known process, so that no waste of the material occurs in the operation.

**IMPROVEMENTS IN CARRIAGES AND CARRIAGE-SPRINGS.**—On Saturday a number of gentlemen assembled at the factory of Mr. J. Betties, Marylebone-road, to witness a series of experiments testing the merits of an improved carriage and carriage-spring, called the Rotunda C-spring Carriage, and patented Nov. 1, 1860, which for comfort, economy, elegance, and durability, cannot fail, when more known, to meet not only with great patronage, but to bring about a marked and certainly an improved change in the carriages of the present day. In constructing the bodies of carriages at present it is usual, in forming the frame, to erect a corner post, or pillar, at each of the corners of the back of the body, and to frame into them other horizontal rails, connecting the corner pillars with those to which the doors are hung, and thus forming the frame of two other separate panels. But, according to Mr. Betties' invention, instead of forming the frame in this manner, no corner pillars are employed, the back and two side panels being made into one large curved panel, the horizontal rails of the frame being formed of bent timber, and each rail framed at its ends into the standing pillars on either side, to which the doors are hung. By this arrangement the appearance of the carriage is materially improved, and there being no angles, more room is given, and the vehicle is considerably strengthened. Mr. Betties' improved carriage-spring consists in the application of an inverted curved spring. At present, the curved springs are applied to the bodies of carriages in various ways; but Mr. Betties places the upper end of the inverted spring, in the case of a hind spring, connected to a metal bracket, the scroll springing from the body of the carriage, the spring passing down behind the axle and underneath it. The spring then rises in front of the axle, and is jointed with couplings and fixed with clips on the axle, a link being used to connect it at one end to the clip and at the other end to the bracket or scroll, by which means the axle is kept rigidly in its place. The front springs are made in the same manner, and fixed as usual to the under bed of the fore carriage, but both the front and hind springs can, if preferred, be fixed in a reversed position. By this arrangement ease and elegance are obtained, which must be experienced to be appreciated. Among others, Mr. Betties complains, and apparently not without great reason, as documents prove he has made every application, but the appointed committee of seven coach-builders, from some as yet unexplained cause, has not permitted him to exhibit a specimen of his improved carriage and carriage-springs in the International Exhibition, while others in the committee have been admitted, and monopolised space for two, three, and four carriages each, although not claiming any title either in novelty or improvement. This is much to be regretted, for Mr. Betties' model and elegant carriage would most certainly have very favourably surpassed any carriage now being exhibited.

**THE ORIGINATOR OF THE RAILWAY SYSTEM.**—From time to time we have referred to the active part played by Mr. Wm. James during the early infancy of the railway system, and we are glad to find that an opportunity is now afforded to the public to learn the "earliest history of passenger traffic on railways" from a very interesting little volume entitled "The Two James's and the Two Stephensons," by E.M.S.P., just issued by Mr. Phipps, of Ranelagh-street, Eaton-square. No statement is made with reference to Mr. James's that is not substantiated by documentary evidence of conclusive character, and even such authorities as Mr. Smiles, the author of the justly celebrated "Lives of the Engineers," and Mr. Robert Stephenson are quoted in Mr. James's favour. We cordially commend the book to the perusal of all railway shareholders, and the public generally.

## Meetings of Mining Companies.

### EAST CARADON MINING COMPANY.

An ordinary general meeting of shareholders was held at Salisbury, on Thursday, Mr. E. W. CHILDRENS in the chair.

The notice convening the meeting having been read, and the minutes of the last confirmed, a statement of accounts was submitted, which showed a profit on the quarter of £7711. 6s. 4d. The report of the agent was read.

The CHAIRMAN, having moved the adoption of the report and accounts, said that it could not fail to be extremely satisfactory to all who had an interest in this property to learn that, notwithstanding the depreciated standard for copper that had ruled since the last general meeting, the profit realised not only admitted the decimation of a dividend of 17s. 6d. per share, but, after paying the amount of that dividend would absorb the balance carried forward to the credit of the profit and loss would be increased by nearly 4000. Even with the present depressed value of copper ore, he saw no reason why the dividend about to be proposed could not be maintained without the slightest deviation from the conservative course hitherto pursued. It could not be too generally known that the 60 fm. level end, although at present comparatively poor, was of precisely the same character of ground as that passed through in the 50 fm. level above; in a short time that hard bar of ground would be driven through, when doubtless they would have the same rich lode to work upon as that passed through in the 50. The present 60 fm. level end was fully 50 fathoms behind the 50 fm. level. The channel of the 70 cross-cut was also of the same character as that passed through in the 60; in about a month's time the lode would be intersected.

Mr. BATTERS enquired of Mr. West, the company's engineer, when it was likely the engine would be got to work?—Mr. WEST replied that he calculated the engine would be at work in about a month or six weeks from the present time.

Mr. H. HAWKES enquired of Capt. Seccombe upon what ground he based his calculations for prospective dividends?—Capt. SECCOMBE, in reply, entered into a detailed explanation of the various workings, referring more particularly to the various points of interest yet to be developed. When the engine was set to work they would be enabled to open up several lodes, one of which, according to the testimony of the best authorities in the county, was likely to prove as productive as those that were now being so profitably explored.

Mr. BATTERS enquired whether it was not the case that several of the lodes which had proved to be productive in South Caradon were not, as yet, unexplored in East Caradon, and he further enquired whether, independently of those untried but unquestionably important points, the present reserves upon the canter lode, Fawcett's lode, and the new lode, were not of themselves of such an extent as to justify the shareholders in expecting a continuance of, if not an increase in, the proposed dividend?—Capt. SECCOMBE replied that at present the most important lode in South Caradon were untried in East Caradon; and as regards the reserves, they were of such an extent as to warrant the most sanguine expectations as to the future.

After some further discussion, the report and accounts were received and adopted, and a dividend of 17s. 6d. per share was declared.

Upon the proposition of Mr. H. FAWCETT, seconded by Mr. TROTTER (of Plymouth), a unanimous vote of thanks was passed to Capt. Seccombe for the successful manner in which he continued to manage the company's property.

The committee of management were re-elected.

A vote of thanks to the Chairman terminated the proceedings.

### MARKE VALLEY MINING COMPANY.

An ordinary general meeting of proprietors was held at Salisbury, on Thursday, Mr. FAWCETT in the chair.

The notice convening the meeting having been read, and the minutes of the last confirmed, a statement of accounts was submitted, which showed a credit balance of £8241. 16s.

The report of the agent was read, which stated that the whole of the mine was looking quite as well as at any former period.

The CHAIRMAN said it was satisfactory to know that no failing off in the various points of operation had taken place during the past quarter, and what was perhaps of still more importance the general prospects were at least fully equal to what they had ever hitherto been since the mine was first opened. Of course, the low standard had adversely affected their profits—indeed, he might safely say that it had made a difference in their dividends of something like 3s. per share, but he thought they had no reason to suppose that copper ore would long remain at its present low price. As regards the financial position of the company, he might, perhaps, be permitted to observe that, although there was a large cash balance, it was the most desirable and prudent course to adopt to divide only the profits realised during the quarter, as there were several important points to come off. Their reserves of ore were already large; in point of fact, he might, he thought, confidently state that Marke Valley would be a dividend-paying property as long as any person in that room lived.

Capt. SECCOMBE entered at some length into a detailed statement of the workings during the past quarter, the present state of the property, and its future prospects, expressing himself strongly of opinion that since the last meeting the mine had actually improved, for since then they had intersected a new and profitable lode, producing better quality ore; and other lodes would shortly be intersected by the cross-cut now going out.

The report and accounts having been received and adopted, a dividend of 3s. per share was declared.—A vote of thanks to the Chairman terminated the proceedings.

### TRUTH'S ECHOES, OR SAYINGS AND DOINGS IN MINING.

There has been considerable animation in the Mining Share Market during the week, although it does not appear that many shares in the leading dividend mines have been negotiated. The usual fortnightly settlement for shares transacted during that period took place on Wednesday, and notwithstanding the unusual heaviness of the account, the whole passed off satisfactorily.

SETONS have advanced, and in good demand.—**NEW SETONS** are offered at lower rates.—**COPPER HILL** and **COOK'S KITCHEN** are sought for at present quotations.—**WHEAL BULLER** have changed hands.—**STHAT PARK** and **WEST STHAT PARK** have been in request.—**NORTH CROFTY**, **NORTH ROSEKAR**, and **CONDORUW** have been freely dealt in, consequent on the respective improvements in the mines.—**EAST BASSET**, **SOUTH BASSET**, and **NORTH BASSET** have found buyers, the former freely at improved rates.—**CLIFFORD** and **TINCROFT** are sought for at buyers' prices.—**CARGOLES** have been more in request, and a few changed hands.—**GREAT SOUTH TOLGUS**, **TOLGUS**, and **WEST TOLGUS** have been dealt in without any material change in price.—**GRAMBELL** and **ST. AUBYN**, **UNY**, **UNITY**, and **UNION** find buyers at market quotations.—**WHEAL CAMBONIUS** are in better request.—**NORTH TRESKERS** have been in good demand, and a large number of shares changed hands, and although they receded, in consequence of several shares coming on the market when buyers were scarce, they have improved since, with a strong tendency to advance, from the enquiries made for the stock.—**NORTH DOWNS** have been fairly dealt in at present quotations, but there is an impression that they will not maintain their price, from the less favourable prospects of the mine.

**EAST CARADON** and **MARKE VALLEY** have been freely dealt in, and the former at better prices; the latter are weaker.—**NORTH PHENIX** are not quite so firm—shares more freely offered.—**LUDCOTT** have been largely dealt in during the week, prices having daily fluctuated. The report this morning (Friday) that silver had been cut in the 84 caused considerable excitement and advance in the price, which shortly after receded, but ultimately left off firmer.—**NORTH TRELAWNS** have changed hands more readily within the last few days.—**WHEAL TRELAWNS** have been in good demand, and a large number dealt in, consequent on a reported improvement.—**MARY ANNS** have been slightly better.—**SOUTH CARADON** **WHEEL HOOPE** and **WHEAL POLLARD** continue in demand; in the latter there has been large transactions at quoted prices.

—**WEST CARADON** and **HERDROPS** have been offered at lower rates.—**KELLY BRAYS** advanced upon a reported improvement, and were in good demand, but have since receded.—**HINGSTON DOWNS**, **DRAKE WALLS**, and **WHEAL EDWARD** are rather inactive.—**EAST RUSSELLS** have changed hands, but show a tendency to decline.—**NORTH ROBERTS** have been largely dealt in at lower rates, but appear firmer now.—**SORTINGE and LADY BERTHA** are quiet at present prices.

**GUNNIS LAKE** (Gillitter's Adit): The recent improvements continue to look remarkably well, and will greatly augment future samplings. They have a good discovery of tin as well as copper.

**CALSTOCK CONSOLS**: The lode generally is looking well in the back of the adit, which is 55 fm. from surface, and in several points there are evident indications of some discoveries being made between this and the surface. The Danescombe lode, in the western workings is large, regular, and of a most promising character, composed of fluor-spar, quartz, mica, and ore, and improving as they get into the hill; in fact, important discoveries are fully expected, as the ground improves as they advance, and the stratum becomes more congenial and easy.—**AT OKEL TON**, in the 50 east, they have a fine course of ore, 4 ft. wide, and yielding fully 8 tons per fathom. The water percolates so freely as to render the driving troublesome. It is the best discovery made in the mine, and is 40 fm. east of all other workings. The 65 and 80 fm. levels east have good runs of ore ground to pass through before getting up to this point. There are other points looking well, and the general prospects of the mine are good.











## THE NEW BURRA BURRA MINING COMPANY OF AUSTRALIA.

Incorporated with limited liability, under the Joint-Stock Companies Acts, 1856-1857. Capital £10,000, in 2000 shares of £5 each. 10s. per share to be paid upon application, and 30s. on allotment. The remainder to be payable at intervals of three months.

## DIRECTORS.

To be chosen at the special meeting of shareholders to be called for that purpose.

BANKERS—Bank of London, Threadneedle-street, London.

COMMERCIAL AGENTS—Messrs. Bennett and Harding, 109, Fenchurch-street, London.

MANAGERS—Messrs. Cave and Co., Yappo, Australia.

This company is formed for working the rich deposits of copper ore contained in properties granted by the Government of South Australia, at a surface rent of 10s. per acre, free from royalty or dues of any kind upon the ore raised. The properties consist of three separate allotments, of 80 acres each, adjoining each other, and forming a length of one and a half mile.

The company's surveyor reports the range of this immense body of mineral to be very regular for the entire length of one mile and a half, varying from 130 to 160 yards wide, formed of solid ribs of carbonate, malachite, and red oxide of copper ore, containing from 19 to 59% per cent. of pure copper.

The mine is under development by a private company, who, in order to more effectively develop the resources of the property, have agreed to dispose of 400 shares, of £5 each, which sum, it is estimated, will be ample to complete the necessary works, and bring the mine into a profitable position. The shares in the Burra Burra Mine, with £5 paid, are now worth £120, and have received in dividends £250. It is anticipated that the shares in the New Burra Burra will become of equal value, and that the mine will rank with the richest in the colony.

The reports of Prof. D. T. Ansted and Messrs. Cave and Co. are annexed. Specimens of the ores, plans, and every information may be had at the office of the company. Upon the list being complete, a meeting will be held to elect directors, &c., and to provide for the future management of the company in London.

Applications for shares will be received by Messrs. FULLER and Co., 26, Change-alley, Cornhill, London.

Report on the New Burra Burra Mine, situated on the Yappo-wins-wirrins, near Mount Rose, in the north of the colony of South Australia.

This mineral property (of which the accompanying plan is a correct delineation) consists of three sections of 80 acres each, numbered respectively 1361, 1370, and 1444. These sections are held under the mining regulations of the province, a copy of which is attached to the plan, and is in the immediate neighbourhood of Mount Stuart and Rose, and in the midst of a rich mineral district, wherein are the mines of the Great Northern and other companies. There is abundance of good timber and building materials near at hand, and water is obtained easily near the surface. The mineral indications are on a very large and extensive scale, being from the foot of Mount Coffin to the south-east extremity of the property about 1½ miles. They consist of ironstone and gossan lodes or veins traversing the clay-slate, following the strike or run of the igneous rock. The lodes are accompanied by highly crystalline coarse felspathic rock, forming a long dyke on back of lodes, and against the great mass of igneous rock. The general underlay of the lodes is to the south-west, at an angle of 75° to 80° to the horizon. These lodes are repeated several times across the section carrying the veins of copper ore, samples of which are now sent, and which yield a produce of copper varying from 17 to 59% per cent. The average width of the indications is from 30 to 160 yards. The copper vein shows very powerfully at A, where it is about 4 yards wide, of the same quality as the specimens Nos. 2, 3, 4 (as sent to Prof. Ansted and to December and January mail), to which packages all numbers refer and correspond. The specimen No. 1 is taken from the end immediately adjoining Mount Coffin; at B south-east there is a great outcrop of the mineral, or, as the miners call it, a great boil. This is 30 yards wide and 70 yards long, with copper veins at C, nearly 120 yards from centre of B, the intervening space being a bundle of these indications and iron. When this part is opened out it will doubtless yield large quantities of the richest copper ore—namely, red oxide (see specimens of minerals and ore in various parcels, numbered from 6 to 8 inclusive). The upheaving or disturbing igneous rock is the usual binary granite or hypersylene rock of the colony, composed essentially of felspar and quartz; the rock varies very much in its composition in various localities; it is often called freestone or sandstone here, but it is in reality a decomposing igneous rock. The samples marked general igneous rock (sent by December mail), numbered from 1 to 6, show it as found about the colony, the hardest being used as a building stone, and the whitest, and finest, and most decomposed for fire-bricks, and would doubtless make good china earth. The other packages of igneous rock samples are from the mine; two of them are from Mount Coffin: Nos. 1 to 7 show the rock in its various aspects (round and about the mine). The two minerals composing the rock vary in quality and relative quantity, the one often replacing the other in great measure, and either or both are replaced by iron, as seen in two specimens from Mount Coffin in same package, a little mica accompanying them. The iron is so abundant in Mount Coffin that in places it becomes nearly a pure ironstone. Samples of ironstone from the lodes are sent. These slate are clay-slates, of which appear to me to be the lower Silurian, very much disturbed and fractured by the above-described igneous rock. I send 13 specimens of the clay-slates, and some specimens of corallines found in the limestone that interstratifies with the clay-slates. I should like you to get an opinion about these from the Curator of the Geological Museum, take him all the specimens of igneous rock and clay-slates, and their corallines. The limestone they are found in is a blue magnesian. The slate and igneous rock being in such a decomposing state makes the country for mining operations good pick-and-pan ground, where but little timber would be required, except in flats and shafts. On the plan the brown streak shows the run of the iron lodes, and the green the copper veins. This lode runs through the valley that lies between the two spurs of Mount Coffin on the south-east side of the mount; it is deflected in places out of a right line, and its general is 60° west of north and east of south; all the paying mines of the colony have these conditions, either being on flats, like Walbaro or Kapunda, or high table lands with low hills, like the Burra. I consider the mineral indications and the mineral actually seen on this property guarantees a good mine, especially when the immense magnitude and rich quality is taken into consideration. I do not think there would be much water to contend with for some time, and that the mine could be worked cheaply, with the single exception of carting the ore down to port. I send you samples of ore in large pieces, Nos. 1 to 8 inclusive, by December mail; smaller samples, 1 to 6, and average of some in powder, with the assay button in each, from each also the geological specimens. By this (January) mail I send samples of minerals, Nos. 1 to 8.

## LOW UNDULATING COUNTRY.

List of samples and specimens sent in various parcels, the numbers corresponding in each for minerals, such as copper ore; geological specimens, such as the slate and rock, &c.; also the numbers corresponding with those sent per *frene*.

Eight samples, per the December mail, 1861:—

		59% per cent.
Minerals, No. 1.	Copper ore from Mount Coffin	.....
No. 2.	A, back of lode	17 "
No. 3.	A, copper glance	54% "
No. 4.	A, carbonate of oxide	28, varies to 36 "
No. 5.	D, copper glance and iron	45 "
No. 6.	B, back of lode	19 "
No. 7.	B, carbonates	19 "
No. 8.	B, rich oxides and carbonates	43% "

19. Specimens marked 8 B in parcel per mail, December, 1861, being the rock and gossan stones of the great bolt at B. Nos. 1 to 8 inclusive, 8 packages of powdered ore taken from general samples, and so as to make as near an average as possible. Each contains the assay button of copper, which copper, although fine and pure enough for samples of stones and specimens, is not so pure and fine as I should make it for commercial assays of regular assays from piles of ore. The fact is, they are not refined, and never are in the sort of trials assays to ascertain the probable richness of the stones.

## CAVE AND CO.

May 28, 1862.—I have looked over the report of the Yappo or New Burra Burra Mine, in South Australia, and also the specimens forwarded, which are marked. Assuming that the simple facts of the case are stated in the report, and that the specimens are what they profess to be, I have no hesitation in saying that the property must be one promising very large and early success in copper mining. The run of the lode, the iron gossan, accompanying a very remarkable crop of carbonates and oxides, the underlie of the lode, the nature of the rock adjacent, and the change of country stated to occur, are all very favourable indeed for an important deposit. The irregular and rich development at the part called in the report the "bowl" of the lode, and which no doubt marks the coming together of several branches; these points, and the extreme richness of the ores, and their evidently superficial position, taken together, lead to the conclusion that a very large local and superficial accumulation of valuable ore lies ready to be removed almost by quarrying, and probably indicates that a main lode of some magnitude will be come upon at no great depth. Anything like the quantity of rich ore that seems to exist close to the surface would amply repay the required investment to bring so simple a mining work into operation. Ores averaging more than 25 per cent. might easily be selected, and would pay a handsome profit on the cost of getting, of carrying to the coast (say, of £6 or £7 per ton), and shipping to England. I think it would be very advisable that samples to the extent of (say) 100 tons of ore should be forwarded to Swansea, and that in getting the ore one or more vertical shafts should be sunk to cut and go through the lode pretty close to its crop; in this manner the condition of the ore a little away from the surface influences would be determined whilst prosecuting paying work. Should it be found convenient or necessary, two or three such trial shafts might with great advantage be put down through the group of lodes where they come close together. I do not see anything to remark upon in reference to the associated rock; they are not like those found in England, and English or even European and American experience would be of little use in judging of the probable magnitude of the lode and its character in depth, without a certain amount of local knowledge. The same remark applies to the gossan. Should these few lines be of any use to you, they are at your service.

## D. T. ANSTED.

P.S.—I got back to England only yesterday, to late for this month's Australian mail. I have looked at the specimens. They are evidently all superficial, but their indications are superb. It is not unlikely that a small shaft might bring out some splendid malachite; at any rate, it could not fail to lead to discovery of importance.

## Extract from Limited Liability Journal, July 12, 1862.

THE NEW BURRA BURRA COPPER MINE OF AUSTRALIA (LIMITED).—These mines constitute three separate grants direct from the Colonial Government of South Australia, free from royalty or dues upon the mineral raised, and subject only to a surface rent of 10s. per acre. The proprietors being impressed with the value of the property, and being satisfied that a small additional sum is required to bring the mine into a similar position as the Burra Burra, have agreed to divide the mine into 2000 shares of £5, rather than reduce their interest by placing it before the public in a large number of shares, and at a heavy expense. Their object is simply to raise, or rather quarry, the copper opened, proved to be the largest deposit in the colony, and of the richest character, samples of which may be seen at the company's office, together with the reports of Professor D. T. Ansted and Messrs. Cave and Co. It is worthy of remark, that the Mount Rose Mine, distant above twenty miles higher in the interior of the colony, consists of one allotment of 80 acres, for which the vendors are to receive £55,000, a sum equal to £27 10s. for each £5 share in the New Burra Burra, which property consists of three times the extent of Mount Rose.

LANCASHIRE AND YORKSHIRE WAGGON COMPANY (LIMITED), BURY, LANCASHIRE.

Capital, £100,000.

The above company are PREPARED TO BUILD and LET FOR HIRE from TEN to ONE HUNDRED MINERAL WAGONS of the best possible construction.—For terms &c., apply to the undersigned.

J. BLOOMELEY, Sec.

OFFICES.—No. 4, BROAD STREET.

TO INVENTORS.—ALL INTENDING PATENTEES should PROCEDE THE PRINTED INFORMATION regarding PATENTS, their COST and the MODE of PROCEDURE to be adopted, ISSUED GRATIS by the GENERAL PATENT COMPANY (LIMITED), 71, FLEET STREET, LONDON.

R. MARSDEN LATHAM, Sec.

## GOONBARROW AND MOLINESS MINES.

On the "Cost-book SYSTEM."

In 6400 shares of £2 each. Deposit, £1 per share; the remainder in calls of 5s. each, at three, six, nine, and twelve months.

## COMMITTEE.

WILLIAM PIPER, Esq., Palace-road, Lambeth.

PETER CLYMO, Esq., South Caradon Mine, Liskeard.

WILLIAM WEST, Esq., Tredeham House, St. Blazey, Cornwall.

SECRETARY—Mr. John Watson, 13, George-yard, Lombard-street.

BANKERS—The Metropolis and Provincial Bank, Cornhill, London.

## PROSPECTUS.

These mines have been worked by one gentleman as sole proprietor, who has expended £14,000 upon them, and returned tin to the value of £20,000: total expenditure, £34,000.

The engine is now at the extent of its power, and the estimated cost to erect a new one, with steam whim, and develop the mines in depth, is £6000; to do this, the proprietor has consented to dispose of the mines, lease, machinery, &c. for the sum of £6500, taking in payment 2000 shares of £2 per share paid up, and £2500 in money, leaving £6000 for capital.

A large proportion of the remaining shares have been subscribed for by residents in the district, and those remaining will be allotted to gentlemen disposed to embark with any premium in a bona fide mining property, holding out prospects of early profits, as the working capital (£6000) is considered by competent judges sufficient to bring the mines into a profitable state, and render further calls unnecessary.

With the present limited mode of working, the mines very nearly pay cost.

## REPORT.

GOONBARROW and MOLINESS MINES, April 29, 1862.—Agreeably with your request, we have this day inspected these mines, and herewith beg to hand you our report:—

GOONBARROW.—The engine-shaft is sunk from surface 60 fms., which is 40 fms. below the adit level. The principal operations have been on three very promising and productive lodes.

NORTH LODE.—The 10 fm. level is driven east of the engine-shaft, on the north lode, 40 fms., and west 30 fms. The lode is from 2½ to 3 ft. wide, and the average work produced from 2½ to 3 cwt., tin per 100 sacks. The 20 fm. level on this lode is driven east and west about the same distance as the 10 fm. level, and the lode in the back of this level all taken away, producing just the same average work. The 30 fm. level is driven east 25 fms., and west 20 fms., through the same character lode, and producing about the same quality work for tin. They expect to cut the same lode in the 40 fm. level, north of the engine-shaft, by driving 2 fms. further; the water is issuing very strong from the end, which is a good indication of being near the lode.

SOUTH LODE.—The 10 fm. level is extended east of the shaft, on the south lode, 20 fms., and west 20 fms.; this lode is 2½ ft. wide, and produces some rich work for tin. The greatest part of this lode is taken away, and the average work for the whole distance driven is 2½ cwt. of tin per 100 sacks. The same level is extended east 4 fms.; the lode in the end is about 2 ft. wide, producing good branches of tin.

GENERAL REMARKS.—The above-mentioned lodes are embedded in a beautiful decomposed granite, and for the short distance opened on have produced upwards of £19,000 worth of tin. The water has been drained from the mine by flat-rods, attached to a pumping-engine, which is now worked to the extent of its power; therefore, we recommend for the further development of the mine that a 50-in. pumping-engine should be erected on the present engine-shaft, which will be of sufficient power to work the mine to a great depth, and also to prove other parallel lodes both north and south, which are known to exist in the set, and have produced tin on the backs. We also recommend the sinking of the two other shafts, one east and the other west of the present engine-shaft, for the purposes of ventilation and drawing the stuff; and we advise that a small steam-engine be erected for drawing the stuff, which will effect a very great saving to the mine, and which cannot be extensively worked without. We strongly recommend that the new work should be erected with as little delay as possible, and should the mine be carried out extensively, with perseverance and economy, we fully believe it will be a long-standing and profitable concern.

MOLINESS.—The engine-shaft is sunk from surface 14 fms., and the lode extended on east 20 fms.; it is 15 ft. wide, producing tin throughout. The working is open to the surface, and for the last ten months the average produce of the work returned from this lode is 1 cwt. of tin per 100 sacks. For the future working of this mine we would recommend that the engine-shaft be sunk on the course of the lode, for the purpose of putting in a railroad in the same shaft, for drawing the tinstuff with the present engine, which is of sufficient power for pumping, stamping, and drawing; by so doing, this mine can be worked to a great extent, and at comparatively little cost, and will then, we firmly believe, make a profitable mine.

## FRANCIS PUCKEY.

R. HANCOCK.

Early applications for shares, accompanied by a deposit of £1 per share, to be made to Messrs. WARREN and CUELL, of 1, St. Michael's-alley, Cornhill, London, where also prospectuses and reports may be obtained.

ALFRED SIME, Esq., F.R.S., Finsbury-circus.

OFFICES.—No. 10a, KING'S ARMS YARD, MOORGATE STREET.

THE RIVER TAMAR COPPER MINING COMPANY (LIMITED).

Capital £10,000, in 10,000 shares of £1 each, paid in full, of which upwards of 7600 have been already allotted.

## CHAIRMAN.

WILLIAM PATTON BLYTH, Esq., Director of the London and County Bank.

CHARLES BARKER, Esq., Chamberlain's Wharf.

JOHN FLEMING, Esq., 21, Austin Friars (Messrs. Robinson and Fleming).

THOMAS HOLROYD, Esq. (The Mines Royal Copper Company).

EDWIN PEARSON, F.R.S., Director of the Scottish Australian Investment Company, and Director of the Kapunda Copper Mine.

ROBERT SPENCE, Esq. (Messrs. Robert Brooks and Co.), St. Peter's Chambers.

COMMERCIAL AGENTS IN ENGLAND.

Messrs. Robert Brooks and Co., St. Peter's Chambers, Cornhill; and

Messrs. Robinson and Fleming, No. 21, Austin Friars.

BROKERS—London and County Bank, Lombard-street.

AUDITORS—Messrs. Colleman, Turquand, Youngs, and Co., Tokenhouse-yards.

SOLICITORS—Messrs. Vallance and Vallance, 20, Essex-street, Strand, and 1, Gough-street.

LAWYERS—Messrs. Reid and Co., Lombard-street.

SECRETARY—Mr. R. Smith.

OFFICES.—62, OLD BROAD STREET, E.C.

Prospectuses and forms of application for shares may be had of the Brokers and offices of the company.

</



Quilliam, T.—For examples of the little-known building stones and marbles of the Isle of Man.

Rhiewydd Slate Company—For general excellence of quality and examples of red Robinson, W., and Co.—For a collection of tin-plate and galvanized sheet-iron of excellent quality. [Iron Hills and Exmoor, and the hematite one of Cwm Noddi.

Rogers, Ebr.—For his active share in developing, since 1851, the iron ore of the Brean-Salt—Chamber or Commerce—For good illustration of an industry conducted on an enormous scale.

Schneider and Hannay—For models and specimens illustrating the very large make of Scottish Ironmasters—For a comprehensive collection of the iron ores and coal, and pig-iron of Scotland. [Quality, and especially for the manufacture of a large plate.

Shetland Bar Iron Company—For collection of iron, smelting products, and iron of good Sim, W.—For producing a fine obelisk of a silver grey granite from a new locality.

Smith, R., for Earl Dudley—For a fine collection of iron of good quality.

Sunderland Local Committees—For elaborate model of a harbour and railways adapted for shipping large quantities of [products of their district.

Swansea Local Committee—For an instructive collection illustrating the metallurgical Taylor Brothers and Co.—For excellence in the manufacture of wrought-iron.

Thompson, Hatton, and Co.—For tin-plate of excellent quality.

Vint, G., and Brothers—For their obelisk of a new and beautiful variety of coal measure Turner, Cassons, and Co.—For excellence of quality in their produce. [Sandstone.

Vigra and Clogau Copper Mining Company—For the first successful result in Britain, chiefly due to their agent, John Parry, of the working of a gold-bearing vein.

Weardale Iron Company—For excellent quality of pig-iron, especially for the description known as spiegel iron.

Welsh Slate Company—For the successful extraction of slates of superior quality, and very large slabs of the Lower Silurian rocks of North Wales.

Wimshurst's Patent Metal Foil Company—For the sheet of cut lead exhibited.

Wood and Daglish—For showing the important application of a fixed underground engine to traction in horizontal, in dip, and in rise workings.

Woodhouse and Jeffcock—For instructiveness of model showing the long-wall mode of working as practised at Shipley.

Wombwell Main Coal Company—For specimens of coal and of the newly-discovered Lincolnshire iron ore, the latter arranged so as to represent the natural strata.

Wright, S.—For the good quality of green slate from the environs of Borrodale.

Yataylfer Iron Company—For economy of production of anthracite iron and tin-plate, illustrated by a good collection of products.

Canada : Billings, E., of the Geological Survey—For his published decades on Canadian fossils, and his valuable general contributions to palaeontology.

English and Canadian Mining Company—For the skill and perseverance with which they have opened their ground, and the discovery of deposits conformable with the strata.

Foley and Co.—For plans of mines, ores, and lead, smelted in the colony. [situation.

Hunt, J. Sterry, of Geological Survey—For the instructively-described series of the crystalline rocks of Canada, and his various published contributions to geological chemistry. [have ran 150,000 miles.

Larus and Co.—For excellent cast iron railway-wheels, made from bog iron ore, which Montreal Mining Company—For interesting series of copper ores, accompanied by plans and sections of the workings.

Taylor, A.—For good specimens of crude and prepared gypsum, with plans and section The Officers of the Geological Survey of Canada—For an admirably-prepared collection of specimens illustrating the mineral resources of the province.

Walton, B.—For the discovery of good roofing slates. [copper mine.

West Canada Mining Company—For specimens and plans illustrating a well-worked Williams, for Canadian Oil Company—For introducing an important industry by sinking artesian wells in the Devonian strata for petroleum.

COLUMBIA : Executive Committee—For their valuable collection illustrating the mineral wealth of the colony.

INDIA : Dr. Hunter—For a carefully-collected series of pottery clays and their manufactured products.

East India Iron Company—For an interesting and instructive collection of specimens illustrating the production of iron and steel in Madras.

Local Committee, Calcutta—For interesting collection of works executed in soapstone. Montgomery, Martin—For his illustration of the hydrographical basins of India.

Oldham, Professor—For specimens, with the analyses, of a series of coals from many localities in India, and for the elaborate work of the Geological Survey conducted by him. Rajah of Vizianagarum—For the interest attaching to his graphite, found in a new locality.

For an extensive collection of soils and the scientific labour bestowed on the analysis. Surveyor-General of India—For the admirably-executed maps of a part of the Himalayas, by the Topographical Survey now in progress.

JAMAICA : Lucas, Barrett—For geological maps and sections, by himself and Mr. Sawkins, with specimens of rocks and ores.

NATAL : Sutherland, Dr.—For his new topographical map of the colony.

NEW BRUNSWICK : Commissioners of New Brunswick—For general collection of rocks and minerals of the colony.

NEWFOUNDLAND : Newfoundland Government—For a general collection of rocks and minerals of the island.

NEW SOUTH WALES : Australian Agricultural Company—For fine specimens of good coal, representing their workings on an extensive scale.

Dawson, A.—For his persevering labour in making the collection of the coal, rocks, and fossils of several localities. Illustrated by a map and section.

Low, J. C.—For his excellent model explanatory of the processes of working stream gold.

Maclean (Surveyor-General)—For his new map of the colony, and the outlines thereof of its general gold fields.

Royal Mint—For admirably-arranged and instructive series of samples of gold and of NEW ZEALAND : Bank of New Zealand—For valuable series of the varieties of gold from the Otago fields. [volcanic rocks and hot springs.

Reilly, C.—For his collections and geological map of Auckland, and his drawings of NELSON : Nelson Government—For their collection and the production of the geological map, by Mr. Hochstetter.

OTAGO : Holmes, M.—Interesting collection of gold specimens and views of local scenery.

NOVA SCOTIA : Honeyman, Rev.—For a large collection of specimens illustrating the geology of the colony.

Howe, Professor—For collection arranged by him, illustrative of the rocks and minerals Provincial Government—For their large and instructive collection, illustrating the occurrence of gold.

Scott, J.—For column of coal, showing the entire height of the seam, 34 ft.; one of the SOUTH AUSTRALIA : Burra Burra Mining Company—For fine instructive series of their copper ores.

Kapunda Copper Mining Company—For an instructive collection of copper ores, smelted.

Wallerup Mining Company—For specimens of copper ore representing a new and important district.

Wheat Elen Mining Company—For fine specimens of lead ores and lead smelted in the TASMANIA : Calder, J. E.—For an instructive series of rocks, building stones, and fossils of the colony.

Commissioners of Tasmania—For series of specimens, especially for those of coal and Gould, C.—For collections, and his arduous labours in developing the geological structure of Tasmania.

Milligan, J.—For his collections, and his merit as a geological pioneer in Tasmania.

TRINIDAD : Wall, G. P.—For the geological map and descriptions of Trinidad, executed by himself and Mr. Sawkins.

VICTORIA : Bank of Australasia—For extensive and interesting series of specimens of gold.

Bank of New South Wales—For fine specimens of gold in the matrix.

Black Hill Mining Company—For quartzose stuff of low produce, skillfully and success-

Burkitt, A. H.—For his neat and instructive analysis of auriferous drift.

Clark and Sons—For well-selected and fine specimens illustrating the produce of a well-worked mine.

Clares Mining Company—For auriferous vein stuff, illustrating the produce of their Colonial Bank of Australasia—For exhibition of different varieties of gold, chiefly in drift.

Commissioners of Victoria—For their well-mounted stampa sent by them to illustrate the extraction of gold by stamping and amalgamation.

Dalnac, R.—For photographs of rocks, fossils, and scenery illustrative of Victorian

Davison, R.—For detailed survey on a very large scale of one of the richest gold fields of the colony.

Knight, J. G.—For the pyramid instructively representing the total quantity of gold raised in Victoria, and for the specimens of the building stones of the colony, illustrated by a treatise.

Turner, W. J.—For an extensive exhibition of precious stones of the colony, gold, tin, and other minerals.

Victoria Government—For the well-arranged gold statistics of the colony and their Victoria Gold Company—For enterprise in the discovery and development of the first

colony found in the colony.

VORTEX TURBINE.—The turbine has for some years past been slowly introducing itself to the notice of the British public, and in the Vortex water-wheel the principle has been so perfectly developed that henceforth the turbine must become a great favourite in all cases where water-power is used. In the western annex, between the large pumps of Easton and Amos, and Gwynne and Co., an excellent specimen of Prof. Thomson's wheel is exhibited by Messrs. WILLIAMSON BROTHERS, of the Canal Iron-works, Kendal, and its action is certainly all that could be desired. Whether compared with the ordinary vertical water-wheel, or with the turbine as usually constructed, this wheel possesses many advantages, and it is, consequently, gratifying to find that the jurors have awarded a medal to the exhibitors, as well as one to Prof. Thomson, for the invention. Compared with the vertical water-wheel, the turbine is cheaper, less expensive to erect, yields the highest obtainable power from a given quantity of water, and is equally efficient for low and high falls. It is not impeded by back water, and can, consequently, be placed below the level of the water in the tail-race, and will make from 100 to 500 revolutions per minute. In addition to these, the turbine has also the advantage of being so small in size that it can be employed in many positions where the ordinary vertical wheel is totally inapplicable, as is frequently the case in the mining districts. Of the Vortex wheel to which we refer it can safely be stated it is the best form of turbine yet conceived. It consists of a movable wheel with radiating vanes, which revolves upon a pivot, and is surrounded by an annular case, closed externally, but having towards its internal circumference four curved guide passages. The water is admitted by one or more pipes to this case, and, issuing through the guide passages, acts against the vanes of the wheel, which is thus driven round at a velocity depending on the height of the fall. The water having expended its force, passes out at the centre. The vortex is constructed with the guide blades, which form the passages for the water, either fixed or movable. If the former be

employed, the orifices through which the water is directed to the revolving wheel are made of such a size as is necessary for the passage of the quantity of water intended to be consumed when the wheel is in full work. This form is well adapted for use where the water is stored in a reservoir, and the power required is regular, or great economy of water not of moment. In cases, however, in which the amount of power employed varies considerably at different times, and the saving of water is important, or the supply uncertain, the vortex with moveable blades is preferable, though somewhat more expensive. The consumption of water can then be economised to the utmost, as the passages are regulated to correspond with the supply, or to admit only the exact quantity needed to perform the work to be done. For steadiness and regularity of motion the vortex turbine is unsurpassed, and the working model of it is, doubtless, the most attractive portions of Messrs. Williamson's display, although their whirlpool centrifugal pump and whirlpool blowing-fan are each worthy of examination.

HORIZONTAL STEAM-ENGINES.—There are few engines exhibited in the western annex more compact in form, or efficient in working, than those of Messrs. WHITMORE and SONS, which, moreover, are admirably placed for inspection, as the large pump of Easton and Amos cannot be reached without passing them. The engine exhibited is applied to some improved mill machinery, but the engine would be equally suitable to every description of work where a cheap and regular rotatory motion is required. The engine is of 10-horse power, with vertical crank shaft and horizontal fly-wheel, the latter being situated within the bed-plate of the engine. The crank-shaft is of solid forged iron, with steel end revolving in a steel step, and the governors, starting apparatus, &c., are all on an improved principle. The construction of the engine is such that the usual friction is considerably reduced, all the parts are readily accessible, and it requires little or no fixing. Messrs. Whitmore and Sons are also manufacturing improved iron water-wheels, which have proved very efficient in action, and pressure turbines, which are especially adapted for high falls. In addition to the mill machinery in practical use, Messrs. Whitmore and Sons also exhibit models of their cylindrical, Cornish, and tubular boilers, as well as of their improved independent steam-boilers of from 2 to 12-horse power, with two internal fire-ways, so constructed that the joints of the plates and rivet-heads are effectually removed from the influence of the fierce action of the flame, whilst their strength and durability are increased at the same time. The connection of the flues to the shell are such that they can, with but little labour, be drawn for the purpose of removing all incrusted or executing any repairs. They are encased in a plate-iron jacket, with funnel attached, which forms a heating surface over the entire boiler, thus ensuring great purity of steam, and safety, and dispensing with the necessity for sealing in brickwork. The flues and attachments are equally applicable to boilers of any power, and can readily be applied to any Cornish boiler now in use. The horizontal engine may be readily found, from its proximity to the very disagreeably-smelling linsed oil-mill.

STEAM CRANE AND PORTABLE ENGINE.—An extremely compact portable vertical engine, applicable to purposes where not more than 30-horse power is required, is exhibited on the right of the eastern passage in the western annex, amongst the locomotives, by Messrs. ALEX. CHAPLIN and CO., of Glasgow. The specimen exhibited is a steam-crane, but their patent dome boilers and patent tubular boilers are equally applicable to stationary engines, hoists, contractors' locomotives, roadway, traction, and carrying engines, &c. These boilers are especially adapted for burning inferior qualities of coal, and are, therefore, valuable in many positions where other boilers are useless. The crane exhibited is neatly mounted on a small wrought-iron railway truck, and is, therefore, well adapted for wharf, quarrying, and railway purposes, yet so simple and effective are they in operation that a single man can raise and place a burden of 5 tons in any required position with the greatest facility. The cost likewise is extremely low, a crane to lift 3 tons costing less than 300*£*, and one to lift 5 tons less than 400*£*, other sizes being in proportion. We understand that the merits of the crane have been well acknowledged during the time it has been at work in the building, both before and since the opening of the Exhibition, in receiving and placing the heavy machinery, &c., two of these cranes being in constant use from the beginning of March till the beginning of May, during which time it is estimated that they lifted and placed nearly 5000 tons weight without the slightest accident—a service which has enabled them to hang up on their machine a very handsome testimonial from Mr. D. K. Clark, the superintendent of the machinery department; and that several have been sold for the purpose of raising stones from quarries, discharging and loading vessels, &c., in which application their economy is apparent.

THE INDUSTRIAL RESOURCES OF SOUTH AUSTRALIA.—An extremely interesting pamphlet has been prepared by Mr. Frederick Sinnett, for the Colonial Government, and issued as a "Companion" to the articles in the South Australian Court of the International Exhibition. The book contains a concise history of the colony, and every information which could be required by the emigrant concerning the wages, provisions, religion, education, &c., is carefully given. To our readers, however, the chapter on Mining will doubtless prove the most interesting; it contains an admirable epitome of the mines which have been opened, including the Burra Burra, the Kapunda, Wallaroo, Moonta, New Cornwall, Duryea, Great Northern, &c. A catalogue of the articles exhibited is appended, and the pamphlet is altogether well calculated to advance the interests of the colony.

THE MINERALS OF VANCOUVER AND BRITISH COLUMBIA.—In the portion of the colonial department devoted to these colonies there is being distributed an interesting pamphlet, from which the merits of them as mining districts can be well judged of. The climate is very similar to that of England, a little warmer in the summer, and a little wetter in the winter, much less fog, exceedingly salubrious, usual length of winter from two to three months, snow seldom remains a week; thermometer rarely above 80° in summer; the nights are always cool, 50° above zero has been known, but the mercury seldom falls below 15° above zero during the five or ten cold days of winter. On the whole, the climate is more salubrious, invigorating, and agreeable than that of England. With regard to the minerals, the exterior has been but slightly explored, yet there have been found gold, silver, with arsenic, rich copper and iron ore, coal abundant near the surface, excellent sandstone, plumbago, limestone, marble white and black, in blocks of any size, cement stone, and roofing slate. The coal of Nanaimo is similar to that on coast, and its deposit is considered inexhaustible. The coal seams of Nanaimo are the only ones worked, and they rudely. A little sandstone and limestone are used for local buildings. Copper mining companies are being formed. Magnetic iron ore, containing 60 to 70 per cent. of metal, with a small quantity of copper, is abundant, and near water, coal, and wood; it is not worked. All iron is imported from England and the States. No iron has been found on the North Pacific coast but in Vancouver. Three or four feet of soil around Victoria covers clay suitable for bricks, below this are beds of white and blue clay equal to any in England, 20 to 60 ft. thick, suitable for the finest crockery; the brick clay is only worked, from want of capital and skilled labour. In British Columbia gold digging has proved a lottery without blanks, and the prizes are, indeed, splendid. Five men, in two months, obtained 20,000*£*. One claim yielded 1700 ozs. (about 5430*£*.) in three days. The average yield of gold to each miner was, last year, 10*£* a week; this far exceeds that of any other gold mining population. Extent of the gold fields unknown. It should require but little consideration to cause any one to believe that want is absent in these colonies, where labour is so handsomely remunerated, and the demand for it is almost unlimited, neither does it seem reasonable to doubt, that with industry and ordinary prudence, a young man may render himself comparatively independent in a few years. During the past year there were two routes to Cariboo, both from New Westminster, distance about 500 miles, and the cost was 5*£* to 10*£*. This season there will be two others, each of them apparently preferable to those used hitherto. One of the new roads commences at the Bentinck Arm, and its length to Alexandria is estimated to be 232 miles—34 river navigation and 178 land travel. On the Bellacoola River, which empties into this Arm, a town called Bellacoola is forming rapidly. A minor walked on snow-shoes from Cariboo to this settlement in 11 days during last February. The other new road leads from the Bute Inlet; it is stated to be nearly 20 miles shorter than that from the Arm, and has only 158 miles of land carriage. The distance of Bute Inlet from Victoria is about 222 miles, whilst the Bentinck Arm is some 500 miles. A few months will decide which of these routes is the better one. Indians were packing 100 lbs. each, at 4*£* per lb., from the Bentinck Arm to Alexandria, and the whole freight from Victoria to that town was reckoned at 5*£*. per lb.; this will materially lessen the cost of living in Cariboo. The Government and people of this colony have shown extraordinary energy in forming roads to its interior.

MINERAL RESOURCES OF NEW BRUNSWICK.—In the interesting pamphlet distributed in the New Brunswick department we find some valuable information with relation to the mineral resources of the province. The carboniferous system of rocks covers an area equal to more than one-third of the entire province. In such an extensive formation of this nature coal must abound; but until within the last few years very little of it was raised in New Brunswick; and, indeed, it was questioned by many whether it existed in sufficient quantities to pay for its working. A seam had been opened for several years at Grand Lake, one of the feeders of St. John River, and about 900 tons of coal were taken from it in 1851; but this, of course, was little better than nothing. Within a few years the discovery of a new species of coal, or mineral substance resembling coal, in Albert county, has directed much attention to that county, and one or two other seams of coal have been discovered. The coal of Albert is principally bituminous and Cannel, and is of a superior description for the manufacture of coal oil, gas, &c. In 1859, 15,000 tons of the first-mentioned coal were taken out, and it sold at the mine for \$15, or 3*£* sterling, per ton. During the past year a vein of pure Cannel coal, 10 ft. wide, has been discovered in the same county, and preparations are being made to work it on an extensive scale. In the vicinity oil works have been erected for the manufacture of oil. The discoveries in Albert have been a source of much gratification to the people of the province, as evidencing that abundant supplies of coal do exist, and that the coal measures are not so barren as some have supposed. Indeed, it is likely that more critical examinations of other sections of the country will prove that localities where coal is now only sup-

posed to exist in small quantities are rich in their deposits of this precious mineral. The value of the coal exported in 1858 was 13,743*£*; in 1859 the exports were not three times as valuable. Iron ore abounds in New Brunswick, and considerable quantities near Woodstock (of the hematite species), and small quantities of iron found in extensive scale were at one time in operation there, very fine iron being produced. 27 ft. Iron ore has also been found in considerable quantities on the Miramichi and at a distance below Fredericton. Its thickness is described as varying from 25 to 60 feet. One great reason why the iron of New Brunswick is not worked more extensively is accounted for by the fact that as yet coal has not been found in the vicinity of the mine and the cost of its conveyance thither so increases the price of the melted iron as to prevent its finding a ready sale. This is an obstacle, however, that time will overcome.

Gypsum, copper, lead, potter's clay, fire-clay, &c., are also found in large quantities.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE

JULY 17.—There is nothing fresh to say respecting the Iron Trade. The works, as previously stated, are much better supplied with orders six weeks or a month ago, and this is especially the case in North Staffordshire. At the same time, the expectation of the imposition of the additional duties to be imposed on exports to the United States has a depressing effect. There is a general expression of opinion that this augmented duty will not affect the importation of iron from this country; but while the measure will fall of prohibiting the importation of British iron, it is almost impossible to believe that it will diminish it. Experience tells us that the last and every increase of duty very considerably reduces the exports of iron from this country to America; and it was only when the large demand for Government contracts for iron-clad ships had to be taken, and a general expectation existed in the States that duties would be further augmented, that a renewed demand arose. No doubt iron had run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand, especially when increased by war requirements; but it seems impossible that an increase in the price of such an article as iron must diminish the consumption, as well as stimulate the production in America. People who would buy cheap iron will prefer wood for many purposes, when the former is very dear, and undertakings which have run low there, and that the means of production in America proved unable to meet the demand,

JULY 19, 1862.]

more than 18 ft. thick, at the depth of 160 yards. The bed of coal is identical with those of the Moira and Gresley Collieries. It is almost impossible to estimate the true importance of this discovery, as it is now confidently believed that a considerable amount of coal did not exist. This is an additional source of wealth for our country, and may, hereafter, grow to important dimensions.

Mr. Fox, of Fox Brothers and Sons, of Derby, has been awarded a medal for iron of excellent quality, and which receives honourable mention for their steam-hammer. The Butterfield, Hesleydale and Co. are awarded two medals, one for well-conducted hop-picks, and the other for designs in vases and fountains. Messrs. Fox Brothers are awarded a medal for good engineers' tools. Mr. H. Goodall receives honourable mention for his long wall system of working coal, as practised in the Shipley Colliery, of Scawby, has honourable mention for his safety-cage apparatus. Mr. A. and J. M. Miers, Lomas and Son, of Bakewell, receive honourable mention for their excellent designs in the working of Derbyshire marble. The mineral department of the Derbyshire lead mines is much the same as last reported. The position of the Mill Town Mine, at Ashover, will shortly fall under the hammer, unless some offer is made by private contract, which does not appear to be possible. The North Derbyshire Company are pushing forward the sinking operations of the Mill Dam the men have been stopped in certain portions of the work to remove debris from a fall of earth, and to get out the water. The local share market and speculation is at a low ebb, in consequence of the general depression in trade.

## REPORT FROM MONMOUTH AND SOUTH WALES.

July 17.—A decidedly better tone prevails in the Iron Trade, and on practical evidences of improvement since the last quarterly meeting of the ironmasters. As announced in a previous report, the Ebbw Vale Company have placed another furnace in blast at Abersychan, as has been done at the Bargwm Mine pit. One of the furnaces at Ebbw Vale is undergoing repairs for some time, and immediately they are completed it is expected that the furnace will be lit. Mr. John Lawrence (Roper and Son) has commenced the erection of an additional furnace at Cwmbran, and quite a sum has been manifested throughout the depressed locality. It is reported that Mr. Marshall has taken to the Van furnaces, near Caerphilly, late the property of Mr. H. Morris. Furnaces were erected many years since on the property, which is now in the hands of Mr. Morris. The old furnaces only worked for a short time, their stoppage having been caused by want of capital. Arrangements are being made by which the Pontypridd will immediately commence working, and a large number of hands will, it is expected, be employed. The forge forms part of the Leigh estate, and it has been in operation for a few months. It consists of four puddling furnaces, all of which will be soon in full operation. The Osborn forge, in the same locality, is also in a few weeks. At Abergavenny and Merthyr the ironworks are in active and everything betokens that the dawn of better times has at last set in. The district of Swanes and the neighbourhood is, as usual, in full operation, and looks promising as regards the future. It may be said that the copper, like the iron, has received a decided impetus within the last few weeks.

IMPROVEMENTS IN HYDRAULIC PRESSES.—For many purposes for which presses are employed, such as for packing cotton and other fibres, and similar materials, the press is required during a considerable portion of its stroke to exert but a comparatively small pressure, whilst for the latter portion of the stroke a much heavier pressure is required. In such cases Mr. M. Scott, of Parliament Street, proposes to employ a compound press, consisting of two or more concentric cylinders. The innermost is fitted with a ram like an ordinary hydraulic press, the cylinder is closed at the bottom, and is made itself to serve as the ram of another hydraulic press formed with the next concentric cylinder, and this may in turn form the ram of a third press. When the press is set to work the water from a force-pump or accumulator is directed first into the interior cylinder, and as this is of small diameter the ram thereof rapidly rises, but the pressure will be comparatively light. As soon as this pressure proves insufficient a cock placed on the supply-pipe of the inner cylinder is closed, and another cock is opened, so as to admit the water from the force-pump or accumulator to the second cylinder. In this manner the ram of the second press, which is the cylinder of the first, is raised, carrying its own ram with it, this being unable to descend being blocked by the water enclosed beneath it. When the second cylinder is brought into work the action of the press will be slower, and the force exerted will be greater in proportion as the sectional area of the ram of the second press (or the cylinder of the first) exceeds the sectional area of the ram of the first press. Where a third cylinder is employed it is brought into action after the second in a similar manner, the second press being then in turn blocked by the water enclosed in it. The important feature in the invention is the blocking of one press, whilst a more powerful one is caused to act against it thus. Two separate hydraulic presses, the one of small and the other of large power, may be arranged one at each end of a frame, the metal to be pressed between them is received between the two presses, and is partly compressed by the press of smaller power, then this is blocked by enclosing water in it, and the press of greater power is put in action to complete the compression. This arrangement may also be employed where mechanical blocking is used in place of or together with water blocking.

## WHAT IS COAL?

Scientific men for a time have treated this question with a prudence akin to that which cautious skaters yield to flaws in the cracking ice. It is delightful, however, to see this reticence gradually disappearing, and the topic once more discussed with a deliberation and lack of sectarian bias, which could hardly have been expected some time ago. One result of the jury trial on the celebrated Torbanchill mineral, in 1858, was to show how much ignorance really existed on this apparently simple question amongst scientific men, and if with them, likewise with the general public. Another result was the dissemination of a vast amount of curious scientific knowledge, and the incentive given to further researches in this special field. It will naturally, then, be expected that new works on geology and mining since published, will devote a greater amount of space to this interesting theme, carefully sifting the vast amount of evidence thus collected with the impartiality which true science demands. In a recent work on Metallurgy, by Dr. Percy, of the School of Mines, London, which is undoubtedly the standard book of its class, the composition, nature, and properties of coal are discussed at considerable length. Dr. Percy says—“In the present state of science I do not believe it possible to propose an exact definition of the term coal. Geological position does not afford satisfactory grounds for a precise definition; for the mineral which was the subject of investigation at the trial in Edinburgh occurs in association with coal of the true Coal Measures; and true coal, as far as may be inferred from the assemblage of chemical and physical characters, is met with in other and more recent geological formations. Perhaps the nearest approach to a definition would be the following:—Coal is a solid mineral substance, more or less easily combustible; varying in colour from dark-brown to black; opaque, except in extremely thin slices; brittle; not fusible without decomposition; not sensibly soluble in ether, benzole, chloroform, or turpentine; not containing sufficient earthy matter to render it incapable of being applied with advantage as a source of heat in ordinary fireplaces or in furnaces. This would exclude amber and other resinous matters, bitumen and bituminous schists, when they contain so large an amount of earthy matter as to be incapable of being employed as fuel; and I think it would also exclude even the most compact varieties of peat.” Whatever difficulty there may be of admitting other substances as coal, there can be none as to the Torbanchill mineral. Its colour is light-grey, not dark-brown; it is very far from brittle; and, as is well known, is utterly useless either for household or furnace purposes. It is distinctly no coal; and we need not enlarge here on its physical peculiarities, which rank it most closely with bituminous schists, which are above contrasted with coal.

As the very highest testimony to its value, and from a jury composed of such men as Sir Roderick Murchison, Mr. Warington Smyth, Mr. Nichols Wood, and Mr. Sopwith, the inventor now feels himself justified in offering it to the public with the fullest confidence as to its efficiency. As formerly advertised, licenses will continue to be issued at £1 per cage to the close of the Exhibition; but after that period they will be charged £6, £7, or £8 per cage, according to the weight intended to be carried, which is the usual rate for patents of such a description. Full sized cages are exhibited in action at all hours in the open court attached to the Eastern Annex of the Exhibition; and the Inventor will attend personally every day at Three o'clock, till the end of August, for the purpose of affording full explanations as to their working efficiency, and of issuing licenses to those who may be desirous of obtaining them previous to the rise in price.

## BURREN LEAD AND CALAMINE COMPANY (LIMITED).

OFFICES, 193, GRESHAM HOUSE, E.C.

TO MINE OWNERS AND OTHERS—THE PATENT SAFETY MINING CAGE.—This UNFAILING and SIMPLE INVENTION CAN BE ADAPTED to ANY MINE SHAFT, at a TRIFLING COST, and its EFFICACY GUARANTEED.—Applications to be made to G. B. GOODMAN, Inventor and patentee, 29, Baker-street, Portman-square, where working models can be seen.

TO COAL OWNERS AND COKE BURNERS.

MACKWORTH'S PATENT COAL WASHER, OR PURIFIER.—This MACHINE will EXTRACT the SHALE and ALL HEAVY IMPURITIES from SMALL COAL at a COST of TWOPENCE PER TON.—For particulars and references, apply to the makers, A. and T. FAY, Temple-gate Works, Bristol; or to Mr. Jos. RIDGE, Basinghall-street, Leeds.

ELLIS LEVER, WEST GORTON WORKS, MANCHESTER, INVENTOR AND SOLE MANUFACTURER OF the FLEXIBLE TUBING, for VENTILATING SHAFTS and EXPLORING DRIFTS. IMPROVED BRATTICE and DOOR-CLOTH in ANY WIDTH, for AIR COURSES in MINES.

Adopted by the Governments of Great Britain, Spain, Denmark, Russia, Brazil, East and West Indies.

EASTON'S PATENT BOILER FLUID, FOR REMOVING AND PREVENTING INCRUSTATION IN STEAM BOILERS, LAND AND MARINE. P. S. EASTON AND G. SPRINGFIELD, Patentees and Sole Manufacturers, 37, 38, and 39, WAPPING WALL, LONDON, E.

Or of their Agents in the principal towns of Great Britain and the Colonies.

EDWARDS'S PATENT MINERAL ORE AND COAL WASHING MACHINE.—This is by far the MOST ECONOMICAL, both in cost and in working, as well as the MOST DURABLE and EFFICIENT MACHINE made. Complete machine, capable of washing from 25 to 50 tons per diem (according to quality), £75.—Full particulars, testimonials, &c., may be obtained from E. EDWARDS, Esq., C.E., Beaumont-buildings, Strand, London.

A MODEL may be seen at Mr. Edwards's office, Beaumont-buildings.

BELL BROTHERS beg to intimate that, having become SOLE LICENSEES in the United Kingdom of Prof. DEVILLE'S METHOD of PRODUCING PURE ALUMINUM, they are now in a POSITION to SUPPLY, from their works here, both this metal and its compound with copper, known under the name of ALUMINUM BRONZE.—Newcastle-on-Tyne, September, 1860.

AYTOUN'S PATENT SAFETY CAGE AND HOIST.—The JURY MAKE HONOURABLE MENTION of this INVENTION in the FOLLOWING WORDS:—“AYTOUN, R.—For simplicity and effective working of his apparatus for securing safety in case of breakage of rope.”

As this is the very highest testimony to its value, and from a jury composed of such men as Sir Roderick Murchison, Mr. Warington Smyth, Mr. Nichols Wood, and Mr. Sopwith, the inventor now feels himself justified in offering it to the public with the fullest confidence as to its efficiency.

As formerly advertised, licenses will continue to be issued at £1 per cage to the close of the Exhibition; but after that period they will be charged £6, £7, or £8 per cage, according to the weight intended to be carried, which is the usual rate for patents of such a description.

Full sized cages are exhibited in action at all hours in the open court attached to the Eastern Annex of the Exhibition; and the Inventor will attend personally every day at Three o'clock, till the end of August, for the purpose of affording full explanations as to their working efficiency, and of issuing licenses to those who may be desirous of obtaining them previous to the rise in price.

CHARLES DAVEY AND CO., SAFETY FUSE MANUFACTURERS, ST. HELEN'S JUNCTION, LANCASHIRE.

HALL AND WELLS, PATENTEES AND MANUFACTURERS OF SUBMARINE TELEGRAPH CORES, CABLES, &c.—TELEGRAPH CONDUCTORS INSULATED WITH INDIA RUBBER at £5 per mile and upwards, PARTICULARLY ADAPTED for MINING PURPOSES. Further particulars as to price of cores, cables, &c., can be had on application to 60, Aldermanbury, City, E.C.; and Steam Mills, Mansfield-street, Borough-road, Southwark, S.E. Copper wire covered with silk, cotton, or any other material, to order.

CREASE'S PATENT EXCAVATING MACHINERY, for SUPERSEDING the SLOW and EXPENSIVE USE of MANUAL LABOUR in SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to drive through any rock of average hardness at a minimum rate of 1 fm. per min, and to sink shafts at the rate of 2 fms. in three days.

Mr. CASAS will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.

Applications to be addressed to Mr. G. N. CURTIS (sole agent), 17, Gracechurch-street, London, E.C.

By providing the power of calculating the time and cost to explore a certain depth and extent of ground, speculation in mining will be assimilated to commercial pursuits, with this unmistakable advantage—that when the ground has been once carefully and judiciously selected, and operations properly and systematically carried out for its development, there would be far less chance of unsatisfactory results than are met with by merchants and manufacturers in the usual routine of their business. As this important invention must beneficially interest the landowners, mine proprietors, merchants, and miners, we hope it will meet with immediate adoption.—*Mining Journal*.

THE GENERAL ROLLING STOCK COMPANY (LIMITED). Capital £150,000, in 15,000 shares of £10 each.

With power to increase.

Deposit, 10s. per share upon application, and 30s. on allotment. And the remainder in calls not exceeding £2 10s. per share, at intervals of not less than three months.

DIRECTORS.

JOHN POPE HENNESSY, Esq., M.P., Director of the Wellington and Cheshire Junction Railway.

JAMES MORRISH, Esq., Director of the Hereford, Hay, and Brecon Railway.

SIR EDWIN PEARSON, F.R.S., Director of the Scottish Australian Investment Co.

RICHARD KYRKE PENSON, Esq., Director of the Abergavenny and Welsh Coast Railway.

W. EDGECUMBE RENDLE, Esq., Director of the South Devon and Tavistock Railway.

ALFRED STERRY, Esq., Colliery Proprietor, Swansea.

JOSEPH TILSTON, Esq., Director of the Amman (Aberdare) Colliery Company.

(With power to add to their number).

AUDITORS—Messrs. Coleman, Turquand, Youngs, and Co., 16, Tokenhouse-yard; John Gordon, Esq., 9, Mincing-lane.

SORCIRORS—Messrs. Davidson, Bradbury, Hardwick, and Carr, Weavers' Hall, 22, Basinghall-street.

BANKERS.

London ..... The Metropolitan and Provincial Bank, 75, Cornhill, E.C.

Liverpool ..... The Alliance Bank of London and Liverpool, 22, The Albany.

Birmingham .... Messrs. Mollett and Son.

BROKERS.

Liverpool ..... Messrs. J. and J. Whitehead, 3, Moorgate-street.

Liverpool ..... Messrs. G. and T. Irvine, 7, India-buildings.

Birmingham .... J. W. Hamilton, Esq., 26, Ann-street.

SECRETARY (pro tem.)—Mr. E. Murphy.

TEMPORARY OFFICES—15, TOKENHOUSE YARD, E.C.

This company is established for the purpose of purchasing, maintaining, and leasing carriages and wagons to railway companies, collieries, and commercial firms in the United Kingdom and elsewhere. Local companies of this description have been formed from time to time, as the demand for increased carrying accommodation has been developed, but the existence of these companies has been almost unknown beyond the immediate districts in which they have been originated, while, at the same time, such companies are amongst the most successful undertakings of the day, distributing large dividends to the shareholders and accumulating ample reserve funds, as will be seen from the following statements:—

Name of company.	Amount of share.	Dividend per cent.	Reserve.	Price.
	£.	£.	£.	£.
Midland Wagon Company	50	10, and occasionally large bonuses.	55,910	100 to 105
The Railway Rolling Stock Association	10	9	20,504	35 to 40
Birmingham Wagon Company	10	10	10,268	40 to 45
Gloucester Wagon Company	10	10	3,500	35 to 40

It is also proposed to take special powers to lease completed lines of railway, and work them at a fixed rate equal to a certain agreed percentage on capital. Although this portion of the business has been carried on with great success by private capitalists, it has not as yet been undertaken by any of the existing companies; but the Directors of the General Rolling Stock Company (Limited) are satisfied, from their practical knowledge, that a very large and profitable trade may be derived from the establishment of this branch of the company's operations, as the whole of the stock will thus be kept in constant work. The Directors have, moreover, the prospect of entering upon a contract of this description immediately they are prepared to undertake it; but no such contract will be taken without the sanction of the shareholders in general meeting.

The want of the accommodation about to be afforded by this company has long been acknowledged, and it is manifest that if the demand of the several provincial districts is equal to the profitable employment of a very large amount of capital, the operations of a company with an enlarged sphere of action promise still more satisfactory results.

It is not proposed at present to expend any capital in the establishment of works or plant for building purposes, but to obtain the company's stock, from time to time, upon the most advantageous terms; thus the capital of the company will at all times be represented by an absolute and available security.

The shareholders will incur no liability beyond the amount of shares allotted to them.

Applications for shares must be made in the form annexed to the prospectus. Each applicant will be required to pay into the bankers of the company 10s. per share on the number of shares applied for, and upon allotment to make a further payment of 30s. per share on the shares allotted to him.

If no allotment be made the deposit will be returned without deduction; but the directors reserve the power to commence business as soon as a sufficient number of shares are subscribed for the purpose.

Prospectuses and forms of application for shares may be had of the brokers, Messrs. J. and J. WHITEHEAD, 3, Moorgate-street; the solicitors, Messrs. DAVIDSON, BRADBURY, HARDWICK, and CARR, 22, Basinghall-street; and at the Temporary Office, 15, Tokenhouse-yard.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.

JOHN H. KOCH, Sec.

187, Gresham House, Old Broad-street, London, July 17, 1862.





## THE MINING SHARE LIST.

## DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
1000 Alderley Edge (Cheshire) [L.]	10 0 0 ..	60 ..	7 18 6 ..	0 10 0 -May	1862	
4000 Bedford United (copper), Tavistock	2 8 8 ..	54 ..	4% 5 ..	12 15 6 ..	2 6 -June	1862
240 Boscawen (tin), St. Just	90 10 0 ..	60 ..	38 10 0 ..	1 0 0 -Mar	1862	
200 Botallock (tin, copper), St. Just	91 5 0 ..	225 ..	245 250 ..	445 15 0 ..	2 10 0 -Feb	1862
1000 Barn Brae (copper, tin), Illogan	15 0 0 ..	73 ..	273 10 0 ..	2 0 0 -Feb	1862	
200 Cefn Cwm Brynwy (lead), Cardiganshire	33 0 0 ..	33 ..	9 0 0 ..	2 0 0 -April	1861	
2400 Cook's Kitchen (copper), Illogan	17 0 9 ..	31 ..	1 7 0 ..	0 7 0 -May	1862	
256 Copper Hill (copper) Redruth	48 0 0 ..	95 ..	82% 85 ..	7 0 0 ..	2 10 0 -May	1862
12000 Copper Miners of England	25 0 ..	25 ..	74 per cent.	Half-yrly.		
35000 Ditto	100 0 0 ..	24 ..	74 per cent.	Half-yrly.		
1055 Craddock Moor (copper), St. Cleer	8 0 0 ..	31 ..	7 8 0 ..	0 4 0 -May	1862	
512 Creggabrew and Penkewl, St. Columb	..	..	10 0 0 ..	0 10 0 -Jan	1862	
867 Cwm Erin (lead) Cardiganshire [L.]	7 10 0 ..	31 ..	7 13 0 ..	0 5 0 -July	1862	
128 Cwmystwyth (lead), Cardiganshire	60 0 0 ..	200 ..	239 10 0 ..	4 0 0 -Mar	1862	
280 Derwent Mines (sil.-lead), Durham	300 0 0 ..	180 ..	147 0 0 ..	5 0 0 -June	1862	
1024 Devon Gt. Con. (cop.), Tavistock [S.E.]	1 0 0 ..	440 ..	430 440 ..	758 0 0 ..	0 5 0 -May	1862
554 Dolcoath (copper, tin), Camborne	128 17 6 ..	560 ..	672 10 0 ..	7 0 0 -June	1862	
1280 Drake Walls (tin, copper), Calstock	9 1 0 ..	212 ..	15 0 0 ..	1 6 -June	1862	
4006 Dyngwyn (lead), Wales	12 6 ..	10 ..	10 0 0 ..	2 6 -May	1862	
512 East Bassett (cop.), Redruth [S.E.]	39 10 0 ..	47% 45 ..	99 0 0 ..	1 0 0 -May	1862	
6144 East Cadron (copper), St. Cleer [S.E.]	2 14 6 ..	45 ..	3 17 6 ..	0 17 6 -July	1862	
300 East Darren (lead), Cardiganshire	32 0 0 ..	45 ..	83 10 0 ..	1 0 0 -June	1862	
128 East Pool (tin, copper), Pool, Illogan	24 5 0 ..	420 ..	810 0 0 ..	2 10 0 -June	1862	
2048 East Wheal Grylls (tin, copper), Germoe	9 10 0 ..	5 ..	4 0 0 ..	—		
3800 Foxdale (lead) Isle of Man [L.]	25 0 ..	35 ..	—	—		
5000 Frank Mills (lead), Devon	3 18 6 ..	4 ..	16 0 0 ..	2 0 0 -Mar	1862	
5000 Great South Tolpuddle [S.E.]	4 14 6 ..	4% 4% ..	18 6 ..	0 5 0 -Dec	1861	
1798 Great Wheal Fortune (tin), Bresge	18 6 0 ..	30 ..	2 0 0 ..	0 10 0 -April	1862	
508 Great Wh. Vor (tin, cop.), Helston [S.E.]	40 0 ..	64 ..	17 6 ..	0 5 0 -Mar	1862	
10240 Gunnis Lake (Clitter's) Adit	..	2 0 0 ..	3 0 0 ..	1 15 0 -June	1862	
1000 Hibernal Mine Company	92 6 ..	27% ..	7 10 0 ..	5 0 0 -Sept	1861	
400 Ilburns (lead), Cardiganshire, Wales	18 15 0 ..	110 ..	387 10 0 ..	2 0 0 -June	1862	
9000 Marke Valley (copper), Cardon	4 10 6 ..	104% ..	2 0 0 ..	3 0 0 -July	1862	
1800 Miners Mining Co. [L.] (d.), Wrexham	25 0 ..	170 ..	86 13 0 ..	5 0 0 -May	1862	
20000 Mining Co. of Ireland (lead, coal)	7 0 ..	18% ..	14 7 11 0 ..	7 0 0 -Dec	1861	
640 Mount Pleasant (lead), Mold	4 0 0 ..	25 ..	10 7 0 ..	10 0 0 -April	1862	
6000 New Birth Tor (lead), Vitifer Cons. (tin)	1 6 6 ..	23% ..	3 6 0 ..	1 0 0 -Sept	1861	
6000 North Downs (copper) Redruth	2 3 4 ..	4% 4% ..	10 0 0 ..	2 0 0 -May	1862	
1286 North Grambler (copper), Redruth	2 7 6 ..	6 ..	10 0 0 ..	0 10 0 -Mar	1861	
5000 Orsred (lead), Flintshire	0 0 8 ..	13% ..	10 4 0 ..	0 8 0 -Mar	1862	
6400 Par Consols (cop.), St. Blazey [S.E.]	1 2 6 ..	6% ..	36 12 6 ..	0 3 0 -Mar	1862	
200 Parys Mine (copper), Anglesey [L.]	50 0 0 ..	5 ..	37 10 0 ..	5 0 0 -Mar	1862	
1772 Polberrin (tin), St. Agnes	..	..	16 9 6 ..	0 10 0 -Dec	1861	
1120 Providence (tin), Uny Lelant [S.E.]	10 6 7 ..	45 ..	42 44 ..	64 0 0 ..	1 0 0 -May	1862
6000 Rosewall Hill and Ruanholt United	2 16 0 ..	4 ..	4 4% ..	6 0 0 ..	3 0 0 -June	1862
16 Rosemoe (lead)	50 0 0 ..	5 ..	1250 0 0 ..	100 0 0 -Quarterly		
612 South Cardon (cop.), St. Cleer [S.E.]	1 5 0 ..	34% ..	376 0 0 ..	5 0 0 -May	1862	
612 South Foligs (cop.), Illogan [S.E.]	18 15 0 ..	110 ..	107 0 0 ..	1 0 0 -May	1862	
498 S. Wh. Francis (cop.), Illogan [S.E.]	18 15 0 ..	110 ..	108% 107% ..	869 5 0 ..	1 0 0 -July	1862
280 Spears Moor (tin, copper), St. Just	31 17 9 ..	33 ..	9 15 0 ..	1 0 0 -June	1862	
940 St. Ivens Consols (tin), St. Ivens	8 0 0 ..	33 ..	19 15 0 ..	1 0 0 -May	1862	
6000 Tammar Con. (sil.-id.), Beerston [S.E.]	4 10 0 ..	13% ..	485 0 0 ..	0 10 0 -Feb	1861	
6000 Tinctor (cop.), Illogan [S.E.]	9 0 0 ..	11% ..	11 13 0 ..	0 5 0 -July	1862	
200 Trumpet Consols (tin), near Helston	57 10 0 ..	100 ..	65 13 0 ..	0 2 0 -Mar	1862	
4200 Vigne and Clogau (copper) [L.]	2 15 0 ..	45 ..	18 12 0 ..	1 0 0 -Jan	1861	
1024 Wendron Consols (tin), Wendron	11 11 10 ..	12 ..	18 12 0 ..	1 0 0 -May	1862	
6000 West Bassett (copper), Illogan [S.E.]	1 0 0 ..	13 ..	22 12 0 ..	0 7 0 -May	1862	
60 West Burton Gill (lead), Yorkshire	50 0 ..	0 ..	14 10 0 ..	0 0 0 -June	1861	
1024 West Cardon (cop.), Liskeard [S.E.]	5 6 0 ..	34 ..	100 11 3 ..	0 7 0 -June	1862	
6400 West Fowey Consols (tin and copper)	7 10 0 ..	4 ..	19 19 6 ..	2 19 6 -May	1862	
1024 West Penfreston (tin, copper)	4 0 0 ..	8 ..	2 19 6 ..	2 19 6 -May	1862	
4000 Wh. Seton (cop.), Camborne [S.E.]	47 10 0 ..	255 ..	353 0 0 ..	7 0 0 -June	1862	
512 Wheat Bassett (copper), Illogan [S.E.]	5 6 0 ..	90 ..	100 0 0 ..	3 0 0 -May	1862	
266 Wheat Buller (cop.), Redruth [S.E.]	5 0 0 ..	55 ..	92 9 0 ..	2 0 0 -Mar	1861	
2900 Wh. Clifford Amalgamated (cp.), Gwen. 50 0 ..	26 ..	25 27 ..	27 2 6 0 ..	10 0 0 -April	1861	
128 Wheal Friendship (copper), Devon	60 0 ..	90 ..	2400 10 0 ..	5 0 0 -Feb	1861	
1024 Wheal Heart (tin), St. Just	9 13 8 ..	17% ..	0 5 0 ..	0 5 0 -May	1862	
512 Wheal Kitty (tin), Uny Lelant [S.E.]	1 7 2 ..	11% ..	8 10 0 ..	0 10 0 -April	1862	
512 Wheal Jane (silver-lead), Kea	3 10 0 ..	5 ..	13 10 0 ..	1 0 0 -Mar	1862	
4800 Wheal Ludcott (lead), St. Ives	2 10 8 ..	17% ..	231 10 0 ..	7 10 0 -Feb	1857	
6000 Hington Down Con. (cop.), Cals. [S.E.]	1 0 0 ..	110 ..	2 18 0 ..	2 0 0 -Nov	1856	
5000 Kelly Brad (lead), Copper	4 15 6 ..	3% ..	2 18 4 ..	0 4 0 -Mar	1862	
1024 Vale of Towy (lead), Carmarthen	10 0 0 ..	1200 ..	1420 0 0 ..	5 0 0 -June	1857	
258 West Dalmat (copper), Gwennap	38 10 0 ..	60 ..	45 0 0 ..	1 0 0 -May	1860	
1024 Wheal Kitty (tin), St. Agnes	4 16 6 ..	25% ..	1 12 0 ..	0 2 0 -July	1860	
1024 Wheal Margery (tin, copper)	17 8 0 ..	8 ..	18 18 6 ..	2 0 0 -July	1860	
1022 Wheal Tremayne (tin, cop.), Gwennap	13 2 6 ..	5 ..	10 2 0 ..	0 7 0 -Jan	1854	

## MINES WITH DIVIDENDS IN ABEYANCE.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
700 Aberdovey (silver-lead), Morioneth	1 10 0 ..	30 ..	..	0 10 0 ..	0 10 0 -Mar	1859
4943 Alford Consols (cop.), Phillack [S.E.]	3 12 9 ..	14 ..	..	20 3 0 ..	0 2 0 -April	1859
2048 Carnforth (tin), St. Just	3 15 0 ..	15 ..	..	0 18 6 ..	0 2 0 -Sept	1860
6000 Charlotte United, Perranuthnoe	2 14 7 ..	15 ..	..	0 13 0 ..	0 1 0 -Sept	1859
256 Condurrow (cop.), Camborne	35 0 0 ..	50 60 ..	..	85 0 0 ..	0 2 0 -June	1862
4076 Devon and Cornwall (copper)	5 16 2 ..	3% ..	..	10 0 0 ..	0 2 0 -Feb	1859
672 Ding Dong (tin), Gulval	40 13 6 ..	14 ..	..	16 7 6 ..	1 10 0 -Mar	1857
2048 East Faughm (sil.-id.), Kenwyn, Kernow	3 10 0 ..	14 ..	..	0 7 6 0 ..	0 2 0 -Jan	1858
1024 East Wheal Loval (tin), Wendron	2 13 6 ..	— ..	..	0 5 0 ..	0 5 0 -May	1862
512 Great Wheal Fortune (tin), Uny Lelant [S.E.]	1 7 2 ..	11% ..	..	8 10 0 ..	0 10 0 -Mar	1862
512 Great Wheal Jane (silver-lead), Kea	3 10 0 ..	5 ..	..	13 10 0 ..	1 0 0 -Mar	1862
4800 Great Wheal Ludcott						